



FROM



SEED



TO



HARVEST



CROP
PRODUCTION
GUIDE 2021



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES





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 **TiMOR™** fungicide into the It's Grow Time™ family. TiMOR 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 Corneillie
Bayer Crop Science Division
VP Customer Marketing, Canada



Table of Contents

What's New	4
BayerValue™	5
SeedGrowth® Team	6

Roundup	7
Roundup® Transorb® HC	
Roundup WeatherMAX®	

Canola	13
---------------	----

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®

Cereals	33
----------------	----

Crop Staging Guide (wheat)

Seed Treatments

Raxil® PRO

Raxil® PRO SHIELD

Herbicides

Buctril® M

Infinity®

Infinity® FX

Luxxur®

Olympus®

Puma® Advance

Thumper®

Tundra®

Varro®

Velocity m3

Fungicides

Delaro®

Folicur® EW

Prosaro® XTR

Stratego® PRO

TiIMOR™

Insecticide

Decis

Growth Regulator

Ethrel®

Corn	65
-------------	----

Crop Staging Guide

Traits

SmartStax® RIB Complete®

Trecepta® RIB Complete®

VT Double PRO® RIB Complete®

Seed Treatment

Acceleron® Seed Applied Solutions

Herbicides

Converge® XT

Option® Liquid

Roundup Xtend® with VaporGrip® Technology

Vios® G3

XtendiMax® with VaporGrip® Technology

Fungicides

Proline

Stratego PRO

Insecticide

Decis



Pulses 83

Crop Staging Guide (field peas)

Crop Staging Guide (lentils)

Seed Treatments

Trilex® EverGol®

Trilex® EverGol® SHIELD

Herbicide

Sencor®

Fungicides

Delaro

Proline

Proline GOLD

Propulse®

Insecticide

Decis

Soybeans 97

Crop Staging Guide

Traits

Roundup Ready 2 Xtend®

Roundup Ready 2 Yield®

XtendFlex® Soybeans

Seed Treatments

Acceleron Seed Applied Solutions

Allegiance®

EverGol® Energy

Herbicides

Roundup Xtend with
VaporGrip Technology

Sencor

XtendiMax with
VaporGrip Technology

Fungicides

Delaro

Stratego PRO

Insecticide

Concept®

Resources 117

Cereal Fungicide Timing Guides

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

What's new for 2021

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 formulation 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.



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES

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

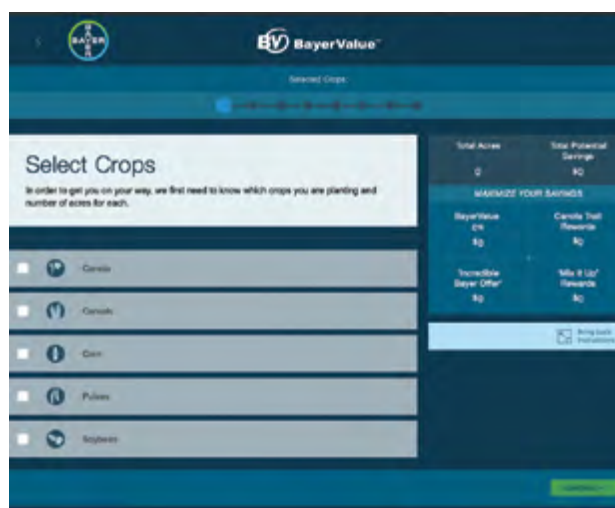
Try our new easy-to-use online calculator on **GrowerPrograms.ca** to get an estimate of your savings and guide you through all the qualifying products specific to your portfolio. Quickly save a PDF copy, print and email it to your retail, Bayer Sales Representative or keep it for your own records.

COMPLIMENTARY FIELDVIEW™ SUBSCRIPTION FOR BAYERVALUE 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 BAYERVALUE 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

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES

Roundup

Roundup Transorb HC

Roundup WeatherMAX with Transorb 2 Technology



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 AND
BROADLEAF WEEDS

ANNUAL
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
Sow thistle (annual)
Stinkweed
Stork's-bill
Velvetleaf
Volunteer canola
Volunteer flax
Wild buckwheat
Wild mustard
Wild tomato

PERENNIAL
GRASS WEEDS

Bluegrass (Canada)
Bluegrass (Kentucky)
Brome grass (smooth)
Cattail (common)
Cottongrass
Foxtail barley
Quackgrass
Wire-stemmed muhly
Yellow nutsedge

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

For full details, please reference
product label.

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



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES



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

CROP(S)	PERCENT GRAIN MOISTURE	VISUAL SYMPTOMS
Barley/Oats/Wheat	Less than 30%	Hard dough stage; a thumbnail impression remains on seed
Canola	Less than 30%	Pods are green to yellow; most seeds are yellow to brown
Dry Beans	Less than 30%	Stems are green to brown in colour; pods are mature (yellow to brown in colour); 80% to 90% leaf drop (original leaves)
Flax	Less than 30%	Majority (75% to 80%) of bolls are brown
Forages	Not Applicable	3 to 7 days before last cut in final year of stand
Lentils	Less than 30%	Lowermost pods (bottom 15%) are brown and seeds rattle
Peas	Less than 30%	Majority (75% to 80%) of pods are brown
Soybeans	Less than 30%	Stems are green to brown in colour; pod tissue is dry and brown in appearance; 80% to 90% leaf drop

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





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 AND
BROADLEAF WEEDS

ANNUAL 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
Curled 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

CROP(S)	PERCENT GRAIN MOISTURE	VISUAL SYMPTOMS
Barley/Oats/Wheat	Less than 30%	Hard dough stage; a thumbnail impression remains on seed
Canola	Less than 30%	Pods are green to yellow; most seeds are yellow to brown
Dry Beans	Less than 30%	Stems are green to brown in colour; pods are mature (yellow to brown in colour); 80% to 90% leaf drop (original leaves)
Flax	Less than 30%	Majority (75% to 80%) of bolls are brown
Forages	Not Applicable	3 to 7 days before last cut in final year of stand
Lentils	Less than 30%	Lowermost pods (bottom 15%) are brown and seeds rattle
Peas	Less than 30%	Majority (75% to 80%) of pods are brown
Soybeans	Less than 30%	Stems are green to brown in colour; pod tissue is dry and brown in appearance; 80% to 90% leaf drop

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

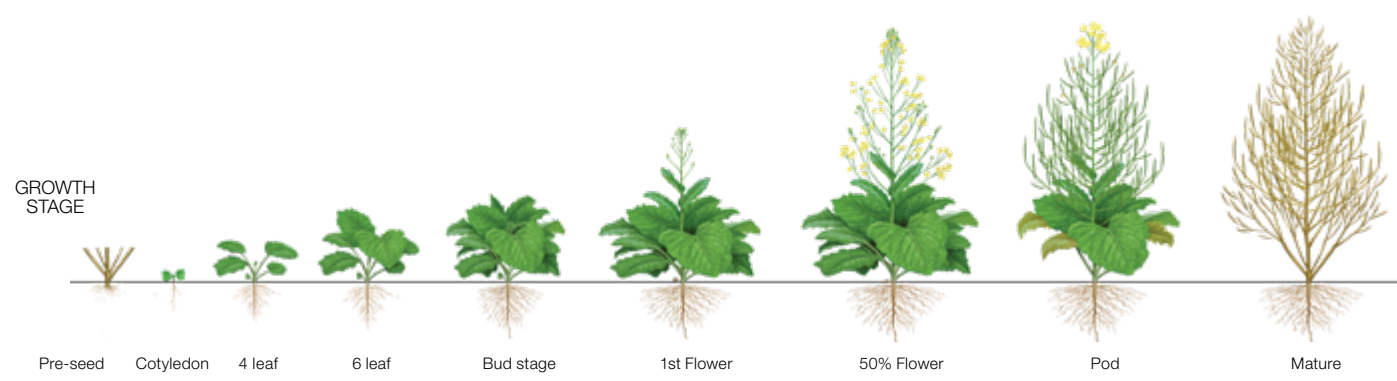
Proline

Proline GOLD

Insecticide

Decis

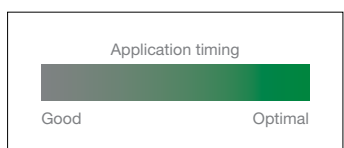
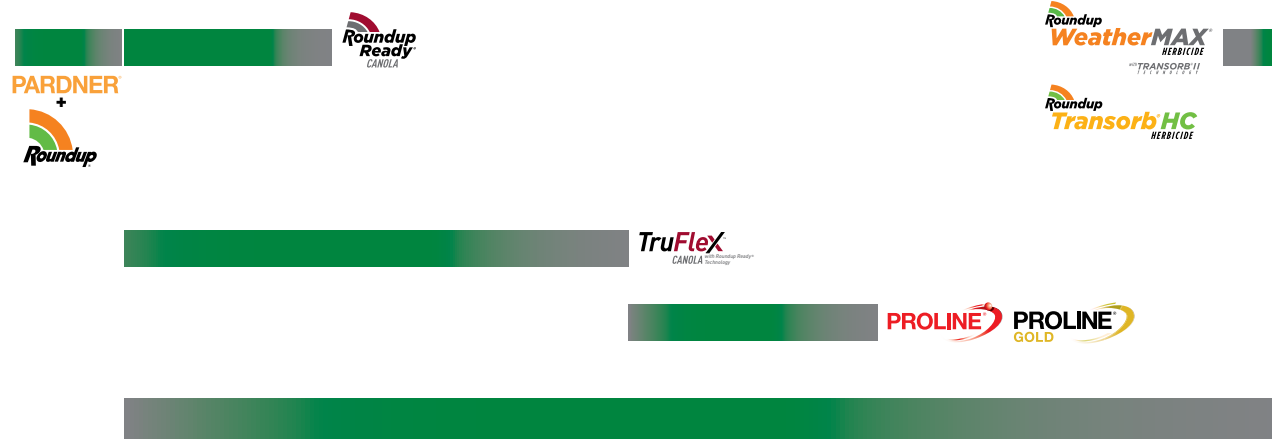
CANOLA CROP STAGING GUIDE



SEED TREATMENT



APPLICATION TIMING



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.

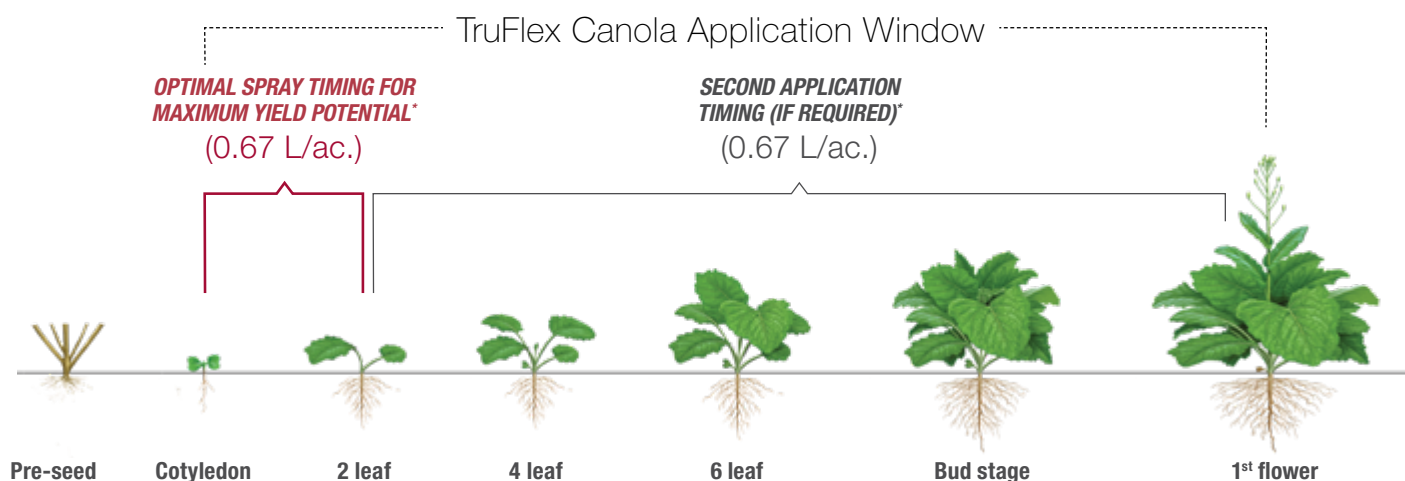
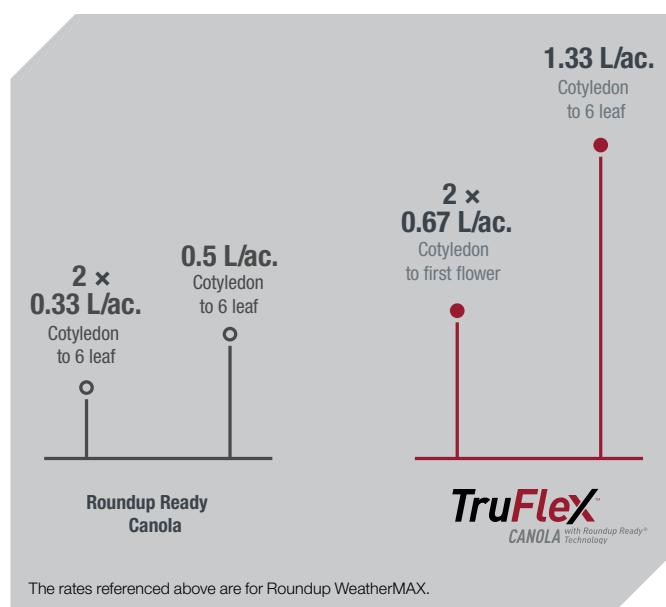
From seeding to harvest, there are only 106 days* to maximize yield potential. By growing TruFlex canola with Roundup Ready Technology, you can make the most of your season.

*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.





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

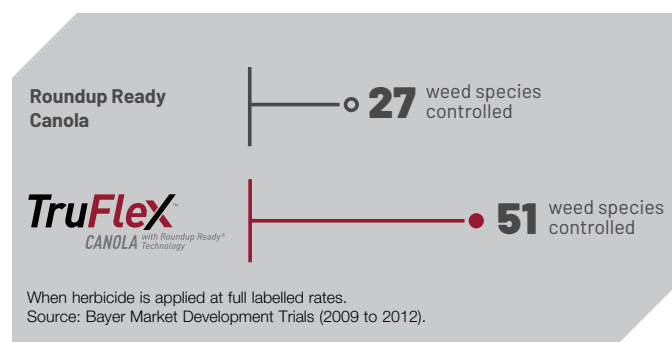
	DANDELION	FOXTAIL BARLEY	WILD BUCKWHEAT
Roundup Ready Canola	Suppression only	Season-long Control	1 to 3 leaf stage
TruFlex CANOLA with Roundup Ready Technology	Season-long Control	Exceptional Control*	Past 6 leaf stage

When herbicide is applied at full labeled rates.
Source: Bayer Market Development Trials (2010).
*99% Control of foxtail barley

- // **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.



Bayer crop safety trial (2009 - 2012).



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES

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

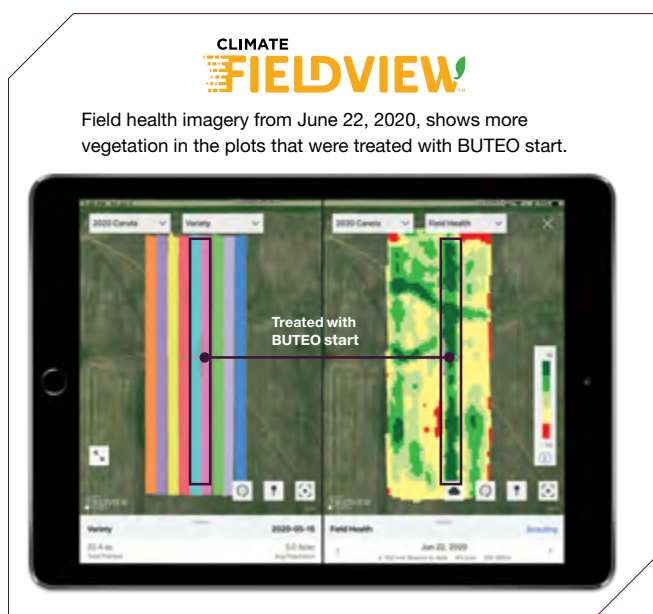
Each block received three different sequential applications that were spaced 17 days apart.

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.



SEED TREATMENT

CROPS FOR USE	ACTIVE INGREDIENTS	FORMULATION	INSECTS CONTROLLED
Canola	Flupyradifurone - Group 4D	Suspension	Crucifer flea beetle Striped flea beetle
		PACKAGING Commercially applied	For full details, please reference product label.



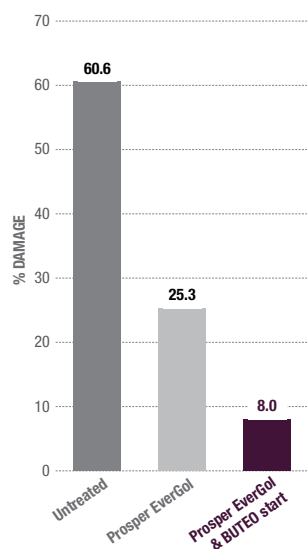
Features and Benefits

- // 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

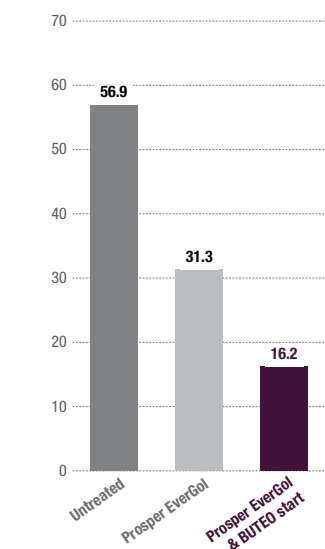
Flea Beetle Damage Comparison Trials

BUTEO start was tested in research trials in areas with heavy flea beetle pressure. It demonstrated superior performance in the trials.

3 TO 6 DAYS AFTER EMERGENCE





14 TO 17 DAYS AFTER EMERGENCE



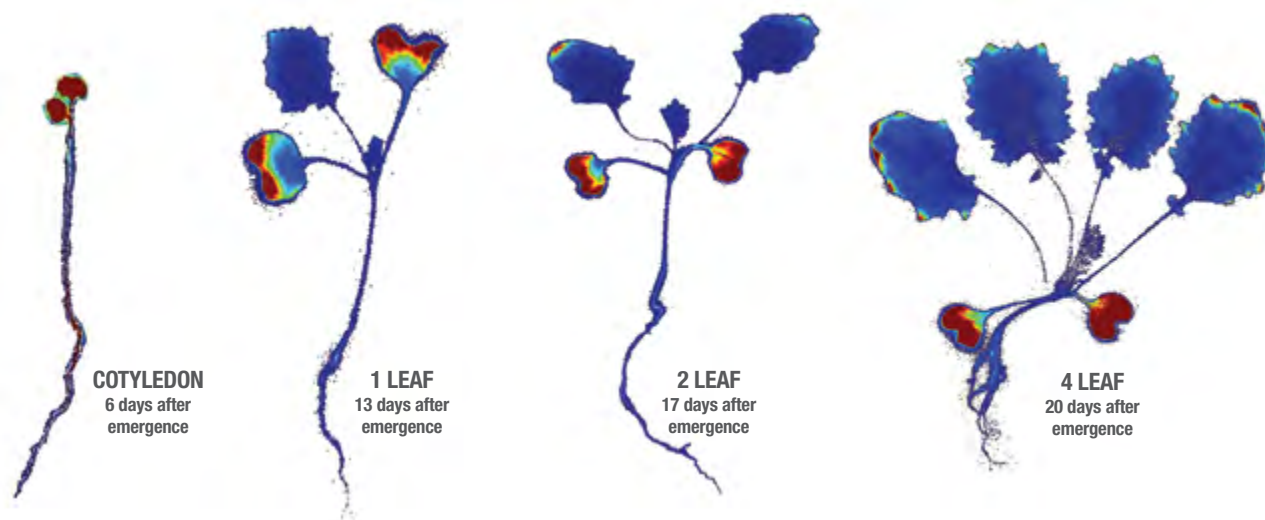
Source: 8 Bayer Field Solutions Trials (2019).
Your results may vary according to agronomic, environmental, pest and disease pressure variables.



Pest and Application Timing

CROP	PESTS CONTROLLED		APPLICATION
Canola	CRUCIFER FLEA BEETLES <ul style="list-style-type: none"> • Bluish-black • 2 to 3 mm (1/10 in.) long • Most prevalent in grassland areas of the northern prairies 	STRIPED FLEA BEETLES <ul style="list-style-type: none"> • Striped – black with two wavy yellow stripes along the back • 2 to 3 mm (1/10 in.) long • Most prevalent in parkland areas of the northern prairies 	Commercially applied

SYSTEMIC TRANSLOCATION



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

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 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.



SEED TREATMENT

CROPS FOR USE	ACTIVE INGREDIENTS	DISEASES CONTROLLED	INSECTS CONTROLLED
Canola Mustard	Clothianidin - Group 4 Metalaxyl - Group 4 Penflufen - Group 7 Trifloxystrobin - Group 11 FORMULATION Suspension concentrate	Alternaria (seed-borne) Blackleg (seed-borne) Seed rot / pre-emergent damping-off and post-emergent damping-off, seedling blight and early-season root rot - Caused by soil-borne <i>Fusarium</i> spp., including <i>Fusarium graminearum</i> and <i>Rhizoctonia solani</i>	Flea beetle For full details, please reference product label.

Give Your Canola the Protection It Deserves

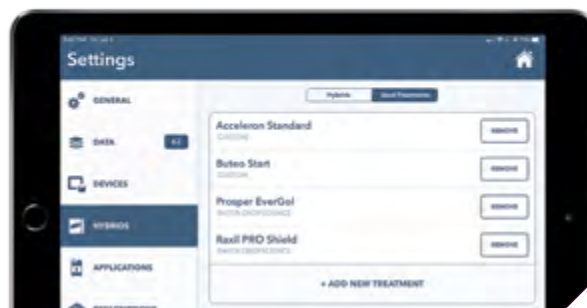
Flea beetle pressure	June 6		June 19		July 2	
	Low	High	Low	High	Low	High
Untreated						
Prosper EverGol						

Pictures taken during 2015 cropping season. 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.



Tracking your seed treatment at seeding time can help you monitor seedling and plant growth throughout the season, as well as evaluate management practices and yields at harvest.



ROUNDUP

CANOLA

CEREALS

CORN

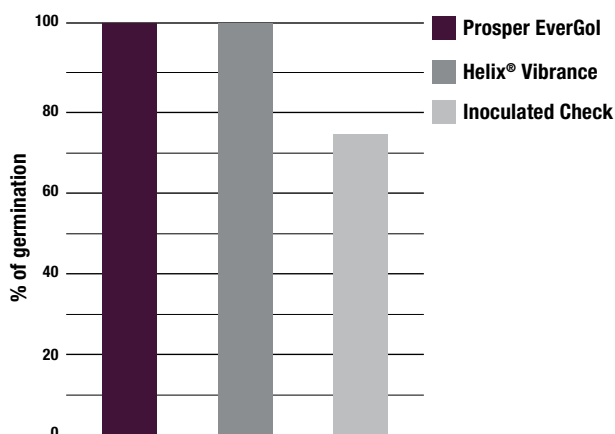
PULSES

SOYBEANS

RESOURCES



Grain Yield In Disease Inoculated* Field Trials



Source: 7 Bayer Agronomic Development Trials (2013 and 2014).
Your results may vary according to agronomic, environmental, pest and disease pressure variables.
**Rhizoctonia*, *Fusarium* spp.

Features and Benefits

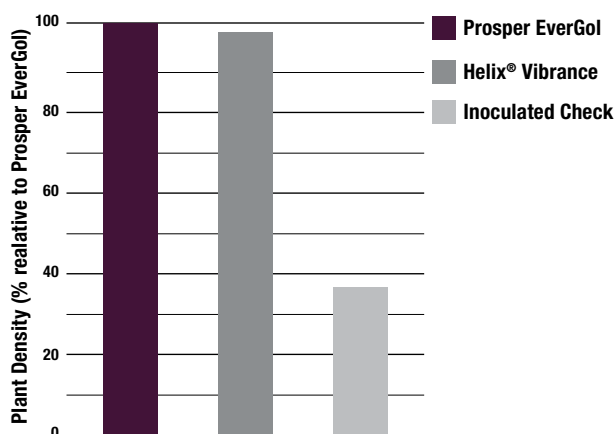
- // Disease protection with outstanding control of fusarium, pythium, rhizoctonia and other yield-robbing diseases
- // Higher yield potential through healthier plant stands
- // Strong seed safety
- // Prosper EverGol protects your canola against the most damaging diseases and insects, including:
 - 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.

* Source: Knodel, J.J. and Olson, D.L., 2002. Crucifer-flea beetle: biology and integrated pest management in canola. North Dakota State Univ. Coop. Ext. Serv. Publ. E1234. North Dakota State University, Fargo, ND.

Plant Stand in Disease Inoculated* Field Trials



Source: 9 Bayer Agronomic Development and Licensing Trials (2013 and 2014).
Your results may vary according to agronomic, environmental, pest and disease pressure variables.
**Rhizoctonia*, *Fusarium* spp.

Seedling disease complex, seed rot, root rot, seedling blight, damping-off

Fusarium spp., *Pythium* spp. and *Rhizoctonia solani* are soil-borne pathogens that cause serious problems, both before and after crop emergence. Rhizoctonia is considered the most serious disease affecting canola stand establishment. Seed will decay in the soil and fail to emerge, or seedlings will shrivel and die shortly after emergence. Stems appear water-soaked or constricted at or below the soil line, resulting in stand thinning and bare patches in a field.

Seed-borne disease

Seed-borne diseases, such as alternaria and blackleg (*Leptosphaeria maculans*), can cause major yield loss. Alternaria affects all stages of growth through the entire plant (excluding the roots) and can cause serious damage in both wet and dry summers. Infected seeds may rot in the ground or produce infected seedlings with dark spots on the cotyledons. Leaf spots usually appear in early summer on lower leaves and produce spores, which later infect the pods and stems. Blackleg kills seedlings shortly after emergence, with symptoms that may be mistaken for damping-off. It also attacks leaves, stems and pods causing cankers, girdling and lodging. Infections occurring before the 6 leaf stage cause the most severe 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 bilaiae* (*P.bilaiae*), 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.



PARDNER®



HERBICIDE

CROPS FOR USE

Alfalfa
AB, SK, MB
(Seedling and established)

Barley

Canary seed

Canola
(Pre-seed up to 24 hours
before seeding)

Fall rye

Field corn

Flax

Grain sorghum

Millet

Oats

Seedling grasses

Sweet corn

Triticale

Wheat

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

American nightshade

(seedlings up to
4 leaf stage)

Bluebur

(seedlings up to
4 leaf stage)

Cocklebur

(seedlings up to
4 leaf stage)

Common buckwheat

(seedlings up to
8 leaf stage)

Common groundsel

(seedlings up to
8 leaf stage)

Common ragweed

(seedlings up to
4 leaf stage)

Cow cockle¹

(seedlings up to
4 leaf stage)

Green smartweed

(seedlings up to
4 leaf stage)

Kochia

(including
glyphosate-resistant
kochia, seedlings
up to 4 leaf stage
or 5 cm in height)

Lady's-thumb

(seedlings up to
4 leaf stage)

Lamb's-quarters

(seedlings up to
8 leaf stage)

Pale smartweed

(seedlings up to
4 leaf stage)

Pigweed

(seedlings up to
4 leaf stage)

Russian thistle

(seedlings up to
4 leaf stage or
5 cm in height)

Stinkweed¹

(seedlings up to
4 leaf stage)

Tartary buckwheat

(seedlings up to
8 leaf stage)

Velvetleaf

(seedlings up to
4 leaf stage)

Volunteer canola

(including
herbicide-tolerant
varieties, seedlings
up to 4 leaf stage)

Wild buckwheat

(seedlings up to
8 leaf stage)

Wild mustard¹

(seedlings up to
4 leaf stage)

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/ac. or 16.5 to 20 ac./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

- // **Canary Seed** 3 to 5 leaf
- // **Corn** 4 to 8 leaf
- // **Flax** 5 to 10 cm tall
- // **Seedling grasses** 2 to 4 leaf
- // **Sorghum** 4 leaf stage to 20 cm in height
- // **Wheat**
Spring application: 2 leaf to early flag leaf stage
Winter application: 2 to 4 leaf stage

Water Volumes

BC, AB, SK, MB Ground

- // Minimum of 10 gal./ac. (94 L/ha)
- // For volunteer canola control in early season:
5 to 10 gal./ac. (47 to 94 L/ha) of water

ON, QC, NB, NS, NFLD, PEI

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

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



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES



HERBICIDE

In-Crop Application on TruFlex Roundup Ready Canola

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

RATE (L/AC.)	GROWTH STAGE OF CROP	WEEDS CONTROLLED	COMMENTS (APPLY IN 20 TO 40 L/AC. OF WATER)
0.22 to 0.33 Single application	Emergence to first flower*	Annual Grass Weeds Barnyard grass, green foxtail, volunteer barley, volunteer wheat, wild oats Annual Broadleaf Weeds Chickweed, cleavers, corn spurry, cow cockle ¹ , flixweed, hemp-nettle, kochia, lady's-thumb, lamb's-quarters, narrow-leaved hawk's beard, night-flowering catchfly ¹ , non-Roundup Ready volunteer canola (rapeseed), redroot pigweed, Russian thistle, shepherd's purse ¹ , smartweed ¹ , stinkweed, stork's-bill, wild buckwheat, wild mustard, wild tomato Perennials (suppression) Canada thistle, dandelion, perennial sow thistle Perennials (season-long control) Quackgrass	¹ 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.
0.51 Single application	Emergence to first flower*	All the above weeds plus: Perennials (season-long control) Canada thistle, perennial sow thistle	
0.33 Sequential applications	Emergence to first flower*	All the above weeds plus: Annual Broadleaf Weeds Round-leaved mallow	For sequential applications, ensure the crop has not advanced beyond the recommended growth stage.
0.67 Single application	Emergence to first flower*	All the above weeds plus: Biennial wormwood ² , 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 beans ³ , wild proso millet, wire-stem muhly (Suppression only) Common milkweed, yellow nutsedge	² Biennial wormwood should be at 2 to 8 leaf stage and actively growing. ³ For control of volunteer adzuki beans (unifoliolate to the fourth trifoliolate 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 unifoliolate to fourth trifoliolate leaf stage and actively growing.
0.67 Sequential applications	Emergence to first flower*	All the above weeds plus: Perennials (season-long control) Bur cucumber, common milkweed, dandelion, field bindweed, horse nettle, tall waterhemp, yellow nutsedge	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.
1.33 Single application	Emergence to 6 leaf	All the above weeds	One application allowed in crop per season.

*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.



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES



In-Crop Application on Roundup Ready Canola

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

RATE (L/AC.)	GROWTH STAGE OF CROP	WEEDS CONTROLLED	COMMENTS (APPLY IN 20 TO 40 L/AC. OF WATER)
0.22 to 0.51	0 to 6 leaf	<p>Annual Grass Weeds Barnyard grass, green foxtail, volunteer barley, volunteer wheat, wild oats</p> <p>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 mallow³, Russian thistle, shepherd's purse¹, smartweed¹, stinkweed, stork's-bill¹, wild buckwheat¹, wild mustard, wild tomato</p> <p>Perennials (suppression)² Canada thistle, dandelion, perennial sow thistle</p> <p>Perennials (season-long control) Canada thistle⁴, foxtail barley³, perennial sow thistle⁴, quackgrass²</p>	<p>Repeat applications may be required if a second flush of weeds germinates prior to canopy closure.</p> <p>For single or sequential applications, ensure the crop has not advanced beyond the recommended growth stage.</p> <p>Maximum 1.67 L/ac. is allowed for post emergence use.</p> <p>¹Use 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.</p> <p>²A single application of 0.33 L/ac. is required.</p> <p>³Sequential applications of 0.33 L/ac. are required.</p> <p>⁴Sequential applications of 0.33 L/ac. are required or a single application of 0.51 L/ac.</p>





HERBICIDE

In-Crop Application on TruFlex Roundup Ready Canola

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

RATE (L/AC.)	GROWTH STAGE OF CROP	WEEDS CONTROLLED	COMMENTS (APPLY IN 20 TO 40 L/AC. OF WATER)
0.22 to 0.33 Single application	Emergence to first flower*	Annual Grass Weeds Barnyard grass, green foxtail, volunteer barley, volunteer wheat, wild oats Annual Broadleaf Weeds Chickweed, cleavers, corn spurry, cow cockle ¹ , flixweed, hemp-nettle, kochia, lady's-thumb, lamb's-quarters, narrow-leaved hawk's beard, night-flowering catchfly ¹ , non-Roundup Ready volunteer canola (rapeseed), redroot pigweed, Russian thistle, shepherd's purse ¹ , smartweed ¹ , stinkweed, stork's-bill, wild buckwheat, wild mustard, wild tomato Perennials (suppression) Canada thistle, dandelion, perennial sow thistle Perennials (season-long control) Quackgrass	¹ 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.
0.51 Single application	Emergence to first flower*	All the above weeds plus: Perennials (season-long control) Canada thistle, perennial sow thistle	
0.33 Sequential applications	Emergence to first flower*	All the above weeds plus: Annual Broadleaf Weeds Round-leaved mallow Perennials (season-long control) Canada thistle, foxtail barley	For sequential applications, ensure the crop has not advanced beyond the recommended growth stage.
0.67 Single application	Emergence to first flower*	All the above weeds plus: Biennial wormwood ² , 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 ³ , wild proso millet, wire-stem muhly (Suppression only) Common milkweed, yellow nutsedge	² Biennial wormwood should be at 2 to 8 leaf stage and actively growing. ³ For control of volunteer adzuki beans (unifoliolate to the fourth trifoliolate 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 unifoliolate to fourth trifoliolate leaf stage and actively growing.
0.67 Sequential applications	Emergence to first flower*	All the above weeds plus: Perennials (season-long control) Bur cucumber, common milkweed, dandelion, field bindweed, horse nettle, tall waterhemp, yellow nutsedge	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.
1.33 Single application	Emergence to 6 leaf	All the above weeds	One application allowed in crop per season.

*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 of control of annual and perennial weeds in Roundup Ready canola varieties.

RATE (L/AC.)	GROWTH STAGE OF CROP	WEEDS CONTROLLED	COMMENTS (APPLY IN 20 TO 40 L/AC. OF WATER)
0.22 to 0.51	0 to 6 leaf	<p>Annual Grass Weeds Barley grass, green foxtail, volunteer barley, volunteer wheat, wild oats</p> <p>Annual Broadleaf Weeds Chickweed, cleavers¹, corn spurry, cow cockle¹, flaxweed¹, 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 mallow³, Russian thistle, shepherd's purse¹, smartweed¹, stinkweed, stork's-bill¹, wild buckwheat¹, wild mustard, wild tomato</p> <p>Perennials (suppression)² Canada thistle, dandelion, perennial sow thistle</p> <p>Perennials (season-long control) Canada thistle⁴, foxtail barley³, perennial sow thistle⁴, quackgrass²</p>	<p>Repeat applications may be required if a second flush of weeds germinates prior to canopy closure.</p> <p>Ensure the crop has not advanced beyond the recommended growth stage.</p> <p>Maximum 0.67 L/ac. is allowed for post emergence use.</p> <p>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.</p> <p>²A single application of 0.33 L/ac. is required.</p> <p>³Sequential applications of 0.33 L/ac. are required.</p> <p>⁴Sequential applications of 0.33 L/ac. are required or a single application of 0.51 L/ac.</p>





FUNGICIDE

CROPS FOR USE

Canola
Flax
Mustard
Safflower
Sunflowers

FORMULATION
Suspension concentrate

PACKAGING
5.1 L jug = 40 ac.

DISEASES CONTROLLED
CANOLA
Sclerotinia

FLAX
Sclerotinia

MUSTARD
Sclerotinia

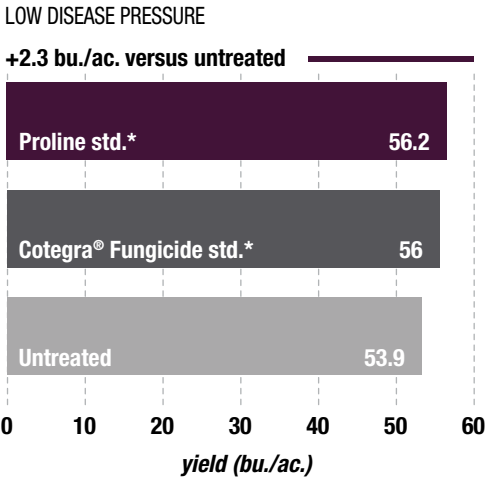
SAFFLOWER AND SUNFLOWER
Rust

For full details, please reference product label.

ACTIVE INGREDIENT
Prothioconazole
- Group 3

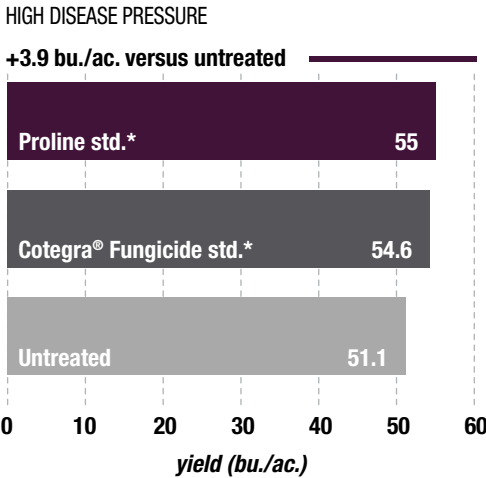
PROLINE VERSUS THE COMPETITION

2-year canola fungicide trial summary – Western Canada



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

To see local results, visit [ItPaysToSpray.ca](https://www.itpays Tospray.ca)



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

source: 13 Bayer canola trials (2018 and 2019).
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.

Source: 7 Bayer canola trials (2018 and 2019).
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

CROP	PRE-HARVEST INTERVAL (DAYS)
Canola Flax (linseed) Oriental mustard Rapeseed (<i>Brassica carinata</i>)	36
Safflower Sunflower	45

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.





FUNGICIDE

CROPS FOR USE

Canola
Oriental mustard
(*Brassica juncea*)
Rapeseed
(*Brassica carinata*)

ACTIVE INGREDIENTS

Fluopyram
- Group 7
Prothioconazole
- Group 3

FORMULATION

Suspension concentrate

PACKAGING
10.12 L Jug = 40 ac.

DISEASES CONTROLLED

CANOLA
Sclerotinia stem rot
ORIENTAL MUSTARD
Sclerotinia stem rot

For full details, please reference product label.

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

CROP	PRE-HARVEST INTERVAL (DAYS)
Canola Oriental mustard (<i>Brassica juncea</i>) Rapeseed (<i>Brassica carinata</i>)	36
Dry beans	14

For all other crops that are registered but not listed in the table, consult the Proline GOLD label for complete details.



ROUNDUP

CANOLA

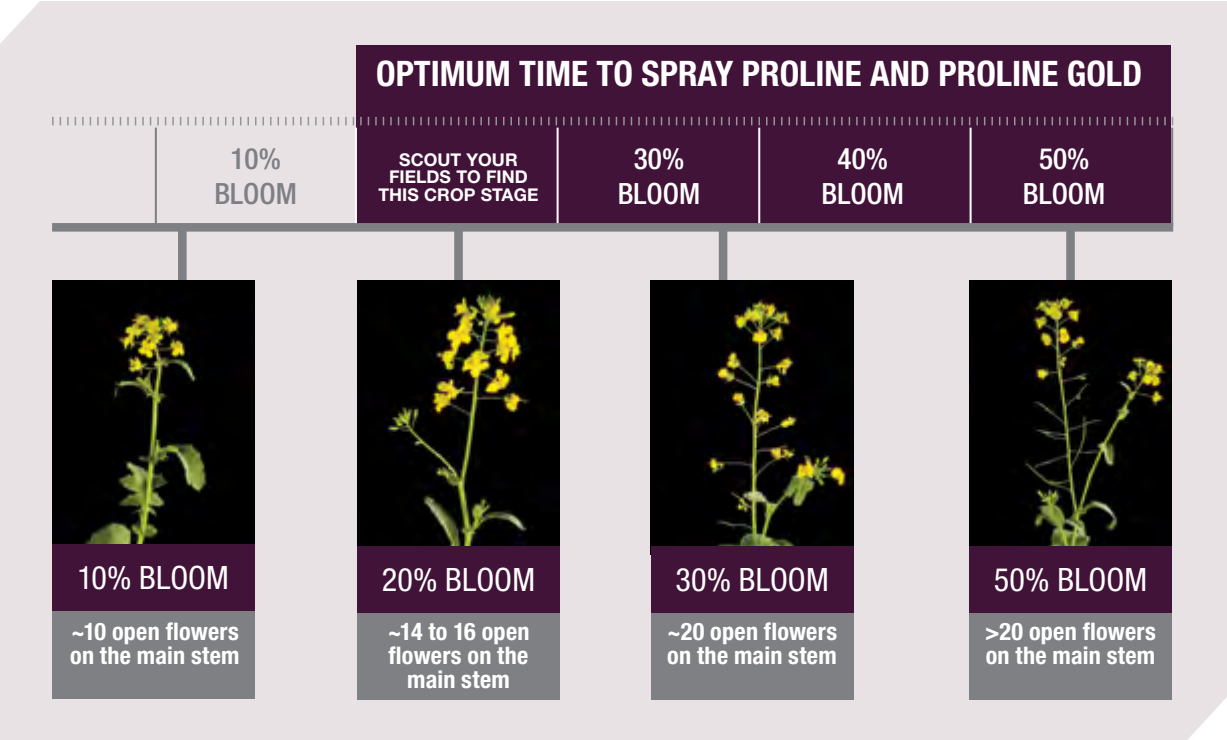
CEREALS

CORN

PULSES

SOYBEANS

RESOURCES



CROPS FOR USE		
Canola Flax Oriental mustard Sunflower		
ACTIVE INGREDIENT Deltamethrin - Group 3		
FORMULATION Emulsifiable concentrate		
PACKAGING DECIS 50 EC BC, AB, SK, MB 2.4 L jug = 40 ac. 9.6 L jug = 160 ac.		
ON, QC, NB, NS, NFLD, PEI Canola: 1 L jug = 16 ac. (see label for details on rate ranges and pests)		
INSECTS CONTROLLED Bertha armyworm Cabbage seedpod weevil ¹ Corn earworm Cutworm Diamondback moth European corn borer Flea beetle Grasshopper Lygus bug		
DECIS 100 EC 1.2 L jug = 40 ac. 4.8 L jug = 160 ac.		
¹ Control of adults only.		
For full details, please reference product label.		

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

CROP	INSECT	50 EC RECOMMENDED RATE	100 EC RECOMMENDED RATE	ACRES PER JUG 50 EC	ACRES PER JUG 100 EC
Canola	Bertha armyworm	60 mL/ac.	30 mL/ac.	16 ac./1 L jug 40 ac./2.4 L jug 160 ac./9.6 L jug	40 ac./1.2 L jug 160 ac./4.8 L jug
Canola	Cabbage seedpod weevil	80 mL/ac.	40 mL/ac.	12 ac./1 L jug 30 ac./2.4 L jug 120 ac./9.6 L jug	30 ac./1.2 L jug 120 ac./4.8 L jug
Canola	Diamondback moth	60 mL/ac.	30 mL/ac.	16 ac./1 L jug 40 ac./2.4 L jug 160 ac./9.6 L jug	40 ac./1.2 L jug 160 ac./4.8 L jug
Canola	Flea beetle	60 mL/ac.	30 mL/ac.	16 ac./1 L jug 40 ac./2.4 L jug 160 ac./9.6 L jug	40 ac./1.2 L jug 160 ac./4.8 L jug
Canola	Lygus bug	60 mL/ac.	30 mL/ac.	16 ac./1 L jug 40 ac./2.4 L jug 160 ac./9.6 L jug	40 ac./1.2 L jug 160 ac./4.8 L jug

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.).



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:

CROP	PRE-HARVEST INTERVAL (DAYS)
Canola Oriental mustard	7
Flax	40
Sunflower	70



Cereals

Crop Staging Guide (wheat)

Seed Treatments

Raxil PRO

Raxil PRO SHIELD

Herbicides

Buctril M

Olympus

Tundra

Infinity

Puma Advance

Varro

Infinity FX

Thumper

Velocity m3

Luxxur

Fungicides

Delaro

Prosaro XTR

TIIMOR

Folicur EW

Stratego PRO

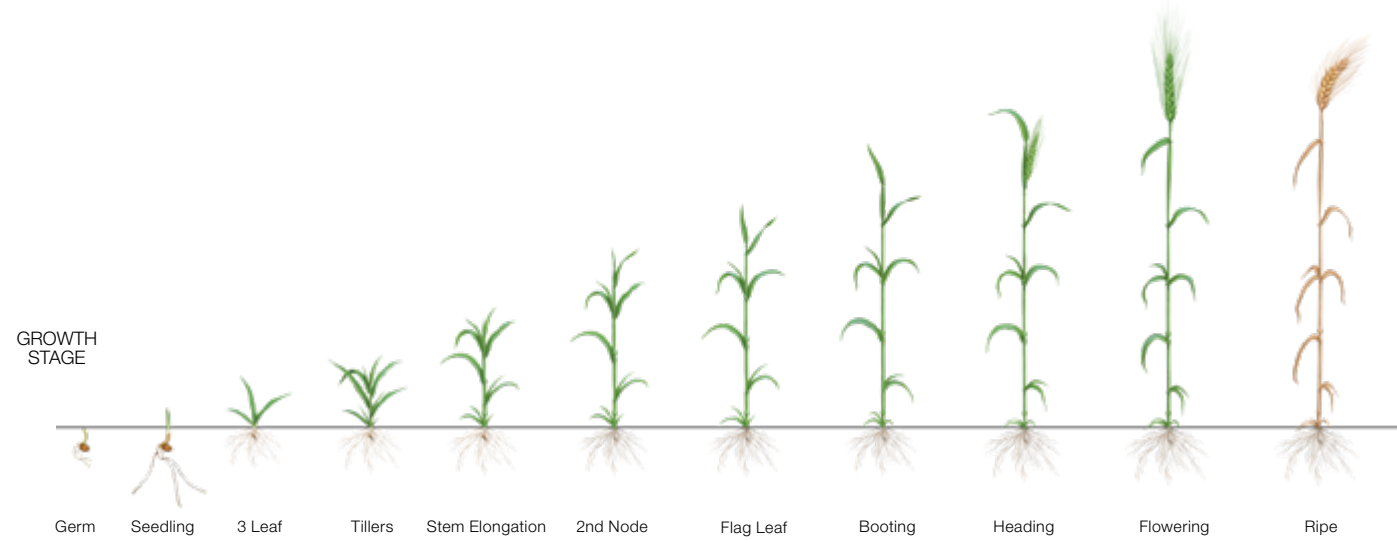
Insecticide

Decis

Growth Regulator

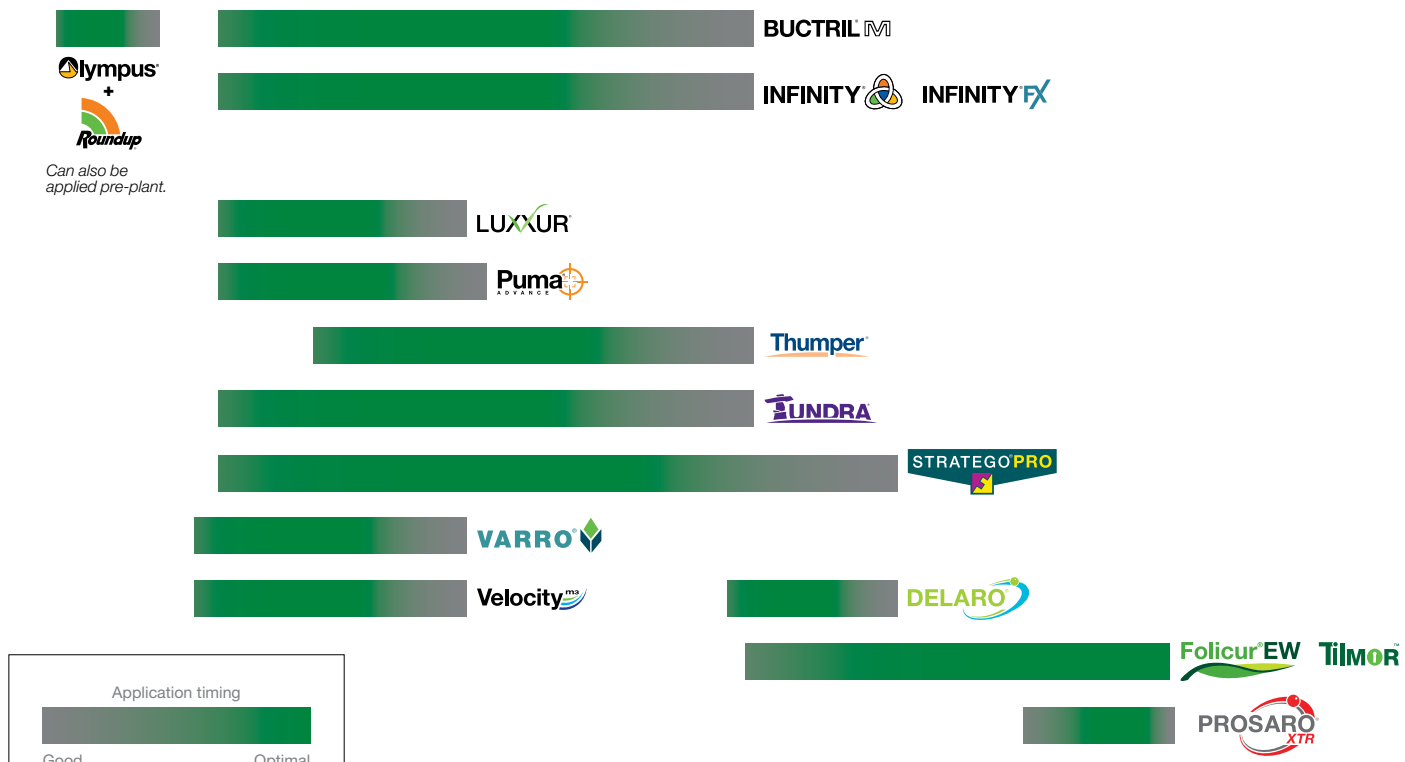
Ethrel

WHEAT CROP STAGING GUIDE



SEED TREATMENT **Raxil PRO** **Raxil PRO** SHIELD

APPLICATION TIMING



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

Raxil PRO**Raxil PRO**
SHIELD**SEED TREATMENT****CROPS FOR USE****Raxil PRO**

Barley
Oats
Rye
Triticale
Wheat

Raxil PRO SHIELD

Barley
Oats
Wheat

RAXIL PRO**ACTIVE INGREDIENTS****Metalaxyl**

- Group 4
- **Prothioconazole**
- Group 3
- **Tebuconazole**
- Group 3

FORMULATION**Micro-dispersion Suspension****PACKAGING****BC, AB, SK, MB**

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 need to be mixed together.

RAXIL PRO AND RAXIL PRO SHIELD**DISEASES CONTROLLED****BARLEY****Barley leaf stripe****False loose smut
True loose smut**

BARLEY, OATS

Covered smut

BARLEY, OATS, RYE, TRITICALE, WHEAT

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.

Seed rot, pre-emergent damping-off, post-emergent damping-off and seedling blight

- Caused by seed-borne *Aspergillus* spp.

Seedling blight

- Caused by seed-borne *Fusarium* spp. including *Cochliobolus sativus*, *Fusarium graminearum*; and soil-borne *Fusarium* spp. including *Fusarium graminearum*, and *Pythium* spp.

OATS, RYE, TRITICALE, WHEAT
Loose smut

WHEAT

Common bunt**DISEASES SUPPRESSED**

BARLEY, OATS, RYE, TRITICALE, WHEAT

Common root rot

- Caused by seed- and soil-borne *Cochliobolus sativus*

Root and crown rot

- Caused by seed- and soil-borne *Fusarium* spp. including *Fusarium graminearum*

Seedling blight

- Caused by seed-borne *Penicillium* spp.

Seed rot, pre-emergent damping off and root rot

- Caused by *Rhizoctonia solani*

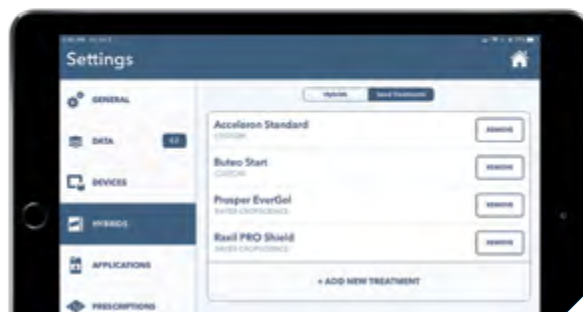
RAXIL PRO SHIELD**INSECT PROTECTION****Wireworms**

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.



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES

Raxil[®] PRO

Raxil[®] PRO SHIELD



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

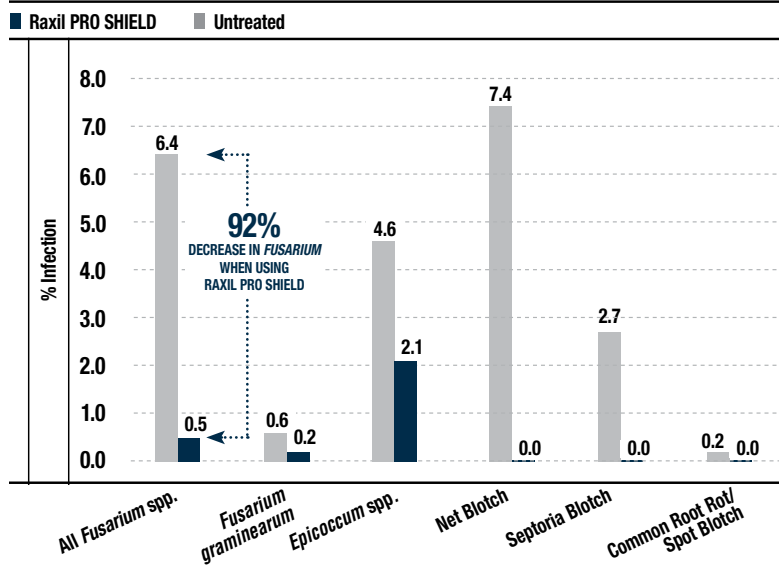
Application Guidelines

Rate

- // Raxil PRO: 325 mL/100 kg of seed
- // Raxil PRO SHIELD: 325 mL (Raxil PRO)
+ 50 mL (Stress Shield)/100 kg of seed

Raxil[®] PRO SHIELD

DISEASE IN SEED SAMPLES WITH *FUSARIUM* INFECTION*

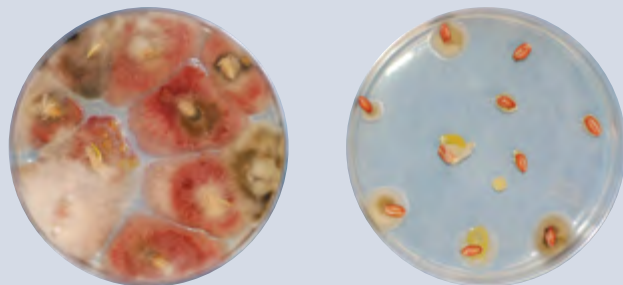


*0 to 5% *Fusarium graminearum* infection.

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.

Untreated versus Raxil PRO SHIELD



Source: BioVision Seed Labs. Reproduced with permission.

BARLEY – BUSHEL TREATED

LB./BU.	10 L RAXIL PRO	58.5 L RAXIL PRO	175.5 L RAXIL PRO
48	141	827	2,480
50	136	794	2,381
52	130	763	2,289
54	126	735	2,205
56	121	709	2,126
58	117	684	2,053

OAT – BUSHEL TREATED

LB./BU.	10 L RAXIL PRO	58.5 L RAXIL PRO	175.5 L RAXIL PRO
34	200	1,167	3,501
36	188	1,102	3,307
38	179	1,044	3,133
40	170	992	2,976
42	162	945	2,835
44	154	902	2,706

WHEAT – BUSHEL TREATED

LB./BU.	10 L RAXIL PRO	58.5 L RAXIL PRO	175.5 L RAXIL PRO
60	113	661	1,984
62	109	640	1,920
64	106	620	1,860
66	103	601	1,804
68	100	584	1,751
70	97	567	1,701

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

Raxil[®] PRO Raxil[®] PRO SHIELD

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.

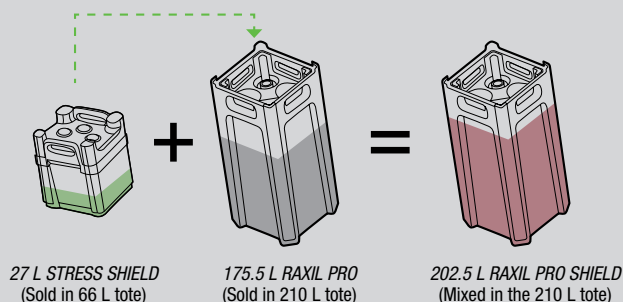
AVAILABLE FOR RAXIL PRO SHIELD

CONVENIENT AND EFFICIENT

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.

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.

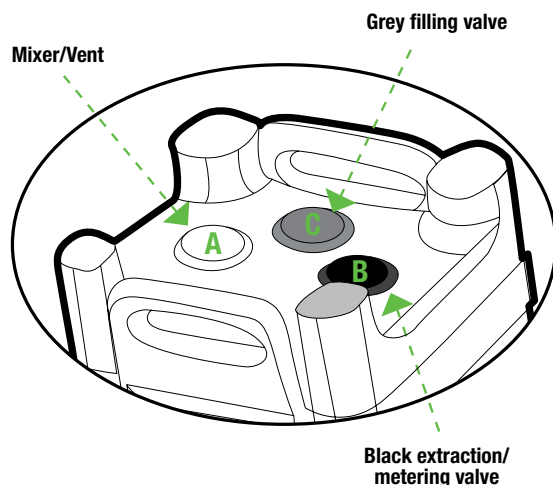
C: Filling Valve

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.



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
- // Flax 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**



HERBICIDE

CROPS FOR USE

Barley

Bromegrass

(established, grown for seed or forage)

Perennial ryegrass

(seedling and established, grown for seed or forage)

Red fescue

(established, grown for seed or forage)

Timothy

(seed production only)

Triticale

Wheat

(durum, spring, winter)

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 CONTROLLED¹

Annual sow thistle (1 to 6 leaf stage)

Canada fleabane^{2,5} (up to 10 cm in height/diameter)

Canada thistle (suppression, up to 30 cm in height)

Chickweed (1 to 6 leaf stage)

Cleavers^{2,4} (1 to 6 whorls)

Common ragweed (1 to 6 leaf stage)

Dandelion³ (suppression, up to 10 cm in height/25 cm in diameter)

Flixweed (up to 10 cm in height)

Giant ragweed^{2,5} (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 and 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 mallow² (1 to 6 leaf stage)

Russian thistle (up to 10 cm in height)

Shepherd's-purse (1 to 6 leaf stage)

Spreading atriplex² (suppression, 1 to 10 leaf stage)

Stinkweed (1 to 6 leaf stage)

Stork's-bill⁵ (with the addition of 2,4-D Ester + AMS, 1 to 8 leaf stage)

Volunteer canola

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

Volunteer soybean² (up to the 5th trifoliate 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 control of cleavers at the 4 to 6 whorl stage, control of Canada fleabane, round-leaved mallow, volunteer soybean and suppression of giant ragweed and spreading atriplex, 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.

For full details, please reference product label.

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 Luzzur, 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 Guidelines

Rate

- // Registered application rate: 0.335 L/ac.

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 brome grass, 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

Pyrasulfotole

- Group 27

FORMULATION

Liquid-emulsifiable
concentrate

PACKAGING

8.1 L jug = 20 ac.

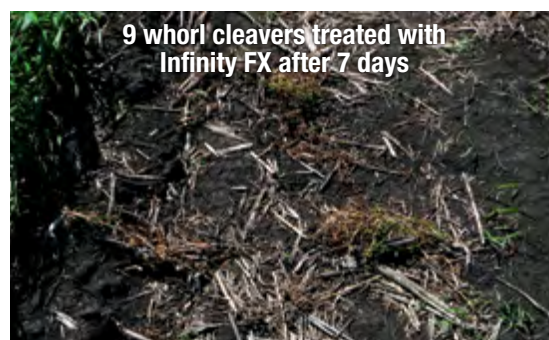
129.6 L drum = 320 ac.

(BC, AB, SK, MB)

405 L tote = 1,000 ac.

WEEDS
CONTROLLED¹**Annual sow thistle**
(1 to 6 leaf stage)**Canada fleabane**^{2,5}
(up to 10 cm in
height/diameter)**Canada thistle**^{2,6}
(suppression, up to
30 cm in height)**Chickweed**
(1 to 8 leaf stage)**Cleavers**⁴
(1 to 9 whorls)**Common ragweed**
(1 to 6 leaf stage)**Dandelion**^{2,3,6}
(suppression, up to
10 cm in height/
25 cm in diameter)**Flixweed**
(up to 10 cm in height)**Giant ragweed**²
(suppression,
1 to 6 leaf stage)**Hemp-nettle**
(1 to 8 leaf stage)**Kochia**
(up to 15 cm in height)**Lamb's-quarters**
(1 to 6 leaf stage)**Narrow-leaved
hawk's beard**^{2,7}
(up to 10 cm in height
and prior to bolting)**Pale smartweed**
(1 to 6 leaf stage)**Perennial sow thistle**⁶
(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)**Spreading atriplex**²
(suppression,
1 to 10 leaf stage)**Stinkweed**
(1 to 6 leaf stage)**Stork's-bill**^{5,7}
(with the addition of
2,4-D Ester + AMS,
1 to 8 leaf stage)**Volunteer canola**
(including herbicide-
tolerant hybrids,
1 to 6 leaf stage)**Volunteer flax**
(up to 15 cm in height)**Volunteer soybeans**
(up to 5th trifoliate 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.

Untreated cleavers

9 whorl cleavers treated with
Infinity FX after 7 days

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: Luxxur, 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

¹ Manitoba and Eastern Canada only.

² Field peas may be grown the year following an Infinity FX herbicide application in all black- and grey-wooded and dark-brown soil zones. Do not plant field peas the year following an Infinity FX 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 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.





HERBICIDE

CROPS FOR USE

Wheat
(durum, spring, winter)

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.

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
the 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 3rd tiller,
suppression only)

Wild oats

(1 to 6 leaf, up to
emergence of
3rd tiller)

Yellow foxtail

(1 to 6 leaf, up to
emergence of 3rd tiller,
suppression only)

BROADLEAF WEEDS

Canada thistle^{1,2}
(up to 15 cm in height)

Cleavers

(1 to 6 whorls)

Cow cockle

(up to 10 cm
in height)

Dandelion

(up to 20 cm
in diameter)

Hemp-nettle

(1 to 6 leaf stage)

Lady's-thumb

(1 to 6 leaf stage)

Lamb's-quarters¹

(up to 10 cm in height)

Narrow-leaved

hawk's beard

(prior to bolting)

Pale smartweed

(1 to 6 leaf stage)

Perennial sow thistle^{1,2}

(up to 15 cm
in height)

Redroot pigweed

(1 to 6 leaf stage)

Round-leaved mallow

(1 to 6 leaf stage)

Russian thistle

(up to 10 cm in height,
suppression only)

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
Sulphate at 500 g/ha (99%)
or 1 L/ha (49% solution) or
1.25 L/ha (40% solution).
If using an Ammonium
Sulphate 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.



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES



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.





HERBICIDE

CROPS FOR USE

Wheat
(durum, spring, winter)

PROVINCES
BC, AB, SK, MB

**ACTIVE
INGREDIENT**
**Propoxycarbazone-
sodium**
- Group 2

FORMULATION
Wettable granule

PACKAGING
1 bottle = 80 ac.

WEEDS
CONTROLLED

Downy brome
Foxtail barley
Japanese brome
Volunteer canola
(including Roundup and
glufosinate tolerant)
Wild oats
For full details, please reference
product label.

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.



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES



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.



Thiencarbazon has activity on these key weeds and when you combine the one-two punch with Olympus and thiencarbazon, 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



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES



HERBICIDE

CROPS FOR USE

Barley
Meadow brome grass
(grown for forage
or seed production)
Seedling perennial
ryegrass
(grown for seed)
Wheat
(durum and spring)

ACTIVE
INGREDIENT

Fenoxaprop-p-ethyl

- Group 1

FORMULATION
Emulsifiable
concentrate

PACKAGING

8.25 L jug = 20 ac.

(one 2 × 8.25 L case
= 40 ac.)

BC, AB, SK, MB
123.75 L bulk shuttle
= 300 ac.
412.5 L bulk tote
= 1,000 ac.

WEEDS
CONTROLLED

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)

Wild oats

(1 to 6 leaf, up to
emergence of the
3rd tiller)

Yellow foxtail

(1 to 6 leaf, up to
emergence of the
3rd tiller)For full details, please reference
product label.

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 2 × 8.25 L case treats 40 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 brome grass (grown for forage or seed production) and seedling 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 brome grass 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.



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES

Thumper®

GROUP
4

GROUP
6

HERBICIDE

CROPS FOR USE

Barley
Wheat
(durum, spring, winter)

PROVINCES
BC, AB, SK, MB

**ACTIVE
INGREDIENTS**
2,4-D

- Group 4

Bromoxynil

- Group 6

FORMULATION
Liquid-emulsifiable
concentrate

PACKAGING

8 L jug = 20 ac.

(one 2 × 8 L case treats
40 ac.)

128 L bulk shuttle
= 320 ac.

400 L bulk tote
= 1,000 ac.

WEEDS CONTROLLED

American nightshade
(seedlings up to
4 leaf stage)

Ball mustard
(seedlings up to
4 leaf stage)

Bluebur
(seedlings up to
4 leaf stage)

Cocklebur
(seedlings up to
4 leaf stage)

Common buckwheat
(seedlings up to
8 leaf stage)

Common groundsel
(seedlings up to
8 leaf stage)

Common ragweed
(seedlings up to
4 leaf stage)

Cow cockle
(seedlings up to
4 leaf stage)

Flixweed
(seedlings up to
4 leaf stage)

Green smartweed
(seedlings up to
4 leaf stage)

Jimsonweed
(seedlings up to
4 leaf stage)

Kochia
(seedlings up to
12 leaf stage or
5 cm in height)

Lady's-thumb
(seedlings up to
4 leaf stage)

Lamb's-quarters
(seedlings up to
8 leaf stage)

**Night-flowering
catchfly**
(seedlings up to
4 leaf stage)

Pale smartweed
(seedlings up to
4 leaf stage)

Redroot pigweed
(seedlings up to
4 leaf stage)

Russian thistle
(seedlings up to
12 leaf stage or
5 cm in height)

Shepherd's-purse
(seedlings up to
4 leaf stage)

Stinkweed
(seedlings up to
8 leaf stage)

Tartary buckwheat
(seedlings up to
8 leaf stage)

**Triazine-resistant
pigweed**
(seedlings up to
4 leaf stage)

Velvetleaf
(up to 8 cm in height)

Volunteer canola
(including
herbicide-tolerant
varieties, seedlings up to
4 leaf stage)

Volunteer sunflowers
(seedlings up to
4 leaf stage)

Wild buckwheat
(seedlings up to
8 leaf stage)

Wild mustard
(seedlings up to
8 leaf stage)

For full details, please reference
product label.

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.



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES



HERBICIDE

CROPS FOR USE

Barley
Wheat
(durum and spring)

PROVINCES
BC, AB, SK, MB

**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)
Wild oats
(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 WEEDS¹

- Annual sow thistle**
(1 to 6 leaf stage)
Canada fleabane²
(up to 10 cm
in height/diameter)
Canada thistle
(suppression, up to
30 cm in height)
Chickweed
(1 to 6 leaf stage)
Cleavers^{2,3}
(1 to 6 whorls)
Common ragweed
(1 to 6 leaf stage)

Dandelion⁴
(suppression, up to
10 cm in height/
25 cm in diameter)

Flixweed
(up to 10 cm
in height)

Giant ragweed²
(suppression,
1 to 6 leaf stage)

Hemp-nettle³
(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 atriplex²

(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)

¹ Includes ALS (Group 2)-resistant
biotypes.

² For control of cleavers at the
4 to 6 whorl stage, control
of Canada fleabane, and
suppression of giant ragweed
and spreading atriplex, 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 indoleacetic acid
(Group 4)-resistant biotypes.

⁴ Includes seedlings and
overwintered rosette.

For full details, please reference
product label.

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, corn (field)¹, flax, oats, peas (field)², potatoes, soybeans¹, 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.



HERBICIDE

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 x 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)

Wild oats

(1 to 6 leaf, up to
emergence of
the 3rd tiller)

Yellow foxtail

(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 x 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



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES



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.



HERBICIDE

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 x 8.1 L case
treats 40 ac.)129.6 L bulk shuttle
= 320 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
the 3rd tiller)Japanese brome^{1,4}(1 to 6 leaf stage,
suppression only)

Persian dandel

(1 to 6 leaf stage, up to
emergence of the 3rd tiller,
suppression only)Wild oats⁴(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 fleabane⁴(up to 10 cm
in height/diameter)

Canada thistle

(suppression, up to
30 cm in height)

Chickweed

(1 to 6 leaf stage)

Cleavers^{2,4}

(1 to 6 whorl stage)

Common ragweed
(1 to 6 leaf stage)Dandelion³(up to 10 cm in height/
25 cm in diameter,
suppression only)

Flixweed

(up to 10 cm
in height)Giant ragweed⁴(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)

Pale smartweed

(1 to 6 leaf stage)

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

(up to 10 cm
in height)

Shepherd's-purse

(1 to 6 leaf stage)

Spreading atriplex⁴(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 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)

¹ Suppression of mixed
populations of fall- and spring-
germinated Japanese brome.² Includes indoleacetic acid
(Group 4)-resistant biotypes.³ Includes seedlings and
overwintered rosettes.⁴ For enhanced control of Canada
fleabane, cleavers in the 4 to 6
whorl stage (including ALS
resistant), Japanese brome,
wild oats, and suppression of
giant ragweed and spreading
atriplex, add Ammonium Sulfate
(AMS) Utility Modifier (40%
solution) at a rate of 0.5 L/ac.
One jug of AMS Utility Modifier
will treat 20 ac.For full details, please reference
product label.

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 x 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



Velocity^{m3}

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)¹, flax, oats, peas (field)², soybeans¹, 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

¹ Manitoba and Eastern Canada only.

² Field peas may be grown the year following a Velocity m3 all-in-one herbicide application in all black- and grey-wooded and dark-brown soil zones. Do not plant field peas the year following a Velocity m3 herbicide application in the brown soil zone where organic matter content is below 2.5% and where soil pH is above 7.5.

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.



FUNGICIDE

CROPS FOR USE

Barley
Oats
Triticale
Wheat
(durum, spring, winter)

PROVINCES BC, AB, SK, MB

ACTIVE INGREDIENTS

Prothioconazole

- Group 3

Trifloxystrobin

- Group 11

FORMULATION

**Suspension
concentrate**

PACKAGING

7.1 L jug

Barley, Oats, Triticale,
Wheat (durum, spring):
1 jug treats 30 ac.

Wheat (winter):
1 jug treats 30 to 40 ac.

113.6 L tote

Barley, Oats, Triticale,
Wheat (durum, spring):
480 ac.

Wheat (winter):
480 to 640 ac.

DISEASES CONTROLLED

BARLEY

Leaf rust
Net blotch
Powdery mildew
Scald
Stem rust
Stripe rust

OATS

Crown rust
Leaf blotch
Stem rust

TRITICALE

Scald
Stem rust

WHEAT
(durum, spring, winter)

Leaf rust
Powdery mildew
Septoria leaf blotch
Stem rust
Stripe rust
Tan spot

For full details, please reference
product label.

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

APPLICATIONS	PRE-HARVEST INTERVAL (DAYS)
One application: Barley, Oats, Triticale, Wheat (durum, spring, winter)	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.
Two applications: Winter wheat	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.





FUNGICIDE

CROPS FOR USE

Barley
Oats
Wheat
(durum, spring, winter)

ACTIVE INGREDIENT

Tebuconazole
- Group 3

FORMULATION

Emulsion in water

PACKAGING

8.1 L jug

0.2 L/ac.

= 40 ac./jug

0.15 L/ac.

= 53 ac./jug*

*For leaf disease only.

DISEASES CONTROLLED

BARLEY

Net blotch

Powdery mildew

Rusts

(leaf, stem and stripe)

Scald

Septoria leaf blotch

Spot blotch

OATS

Crown rust

Stem rust

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.

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

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



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES



FUNGICIDE

CROPS FOR USE

Barley
Oats
Wheat
(durum, spring, winter)

ACTIVE INGREDIENTS

Prothioconazole

- Group 3

Tebuconazole

- Group 3

FORMULATION

Emulsifiable concentrate

PACKAGING

6.5 L jug = 20 ac.

(one 2 x 6.5 L case = 40 ac.)

104 L bulk shuttle = 320 ac.

DISEASES CONTROLLED

BARLEY

Blotch

(net and spot)

Fusarium head blight

(suppression)

Powdery mildew

Rusts

(leaf, stem and stripe)

Scald

Septoria leaf blotch

OATS

Crown rust

Septoria leaf blotch and black stem

Stem rust

WHEAT

Fusarium head blight

(suppression only)

Powdery mildew

Rusts

(leaf, stem and stripe)

Septoria glume blotch

Septoria leaf blotch

Tan spot

For full details, please reference product label.

Features and Benefits

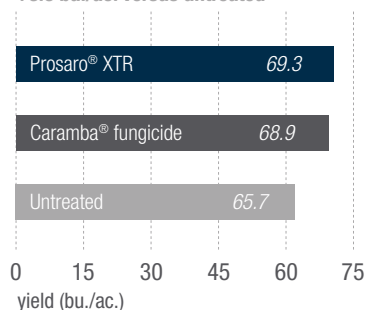
- // The enhancement of mefenpyr-diethyl helps plants to more efficiently mitigate stress. This allows them to expend their energy on producing yield and use less resources to defend themselves.
- // The power of two fungicide actives, prothioconazole and tebuconazole, provide protection against a broad 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

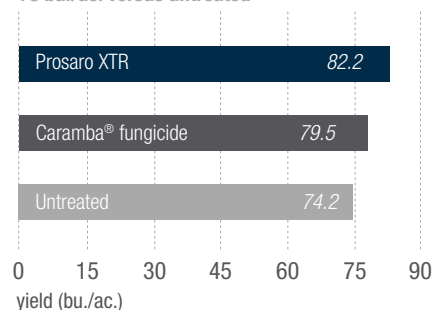
+3.6 bu./ac. versus untreated



Source: 24 grower-cooperated replicated wheat trials (2017-2019). Prosaro® XTR fungicide yield exceeded Caramba® fungicide 67% of the time (16/24 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.

NORMAL TO ABOVE NORMAL MOISTURE >85% AVERAGE MOISTURE

+8 bu./ac. versus untreated



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.



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES



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

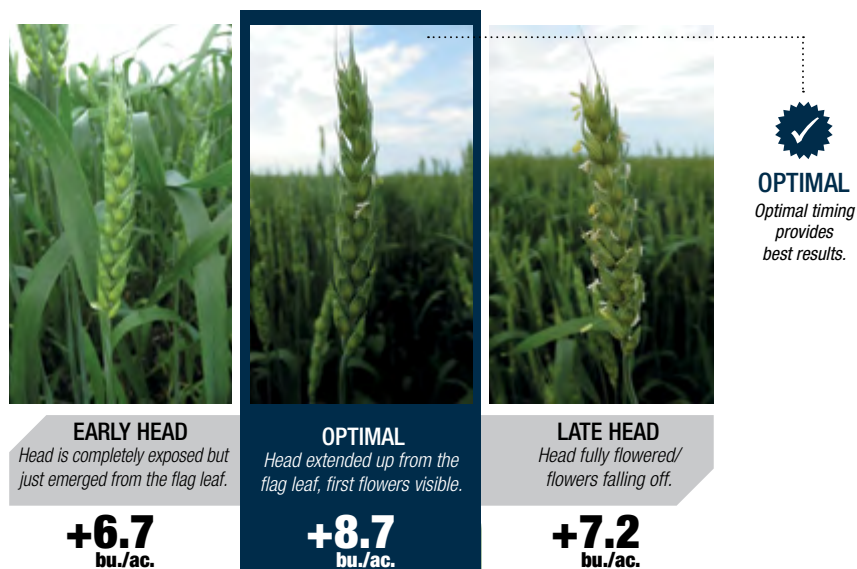
// Tank mixable with Lorsban® for wheat midge control
// Tank-mix order is Prosaro XTR, then Lorsban®

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.



Source: 11 Bayer grower-cooperated replicated Cereal DSTs (2012, 2013 and 2016).
Numbers are expressed as gain in yield versus the untreated check.
Your results may vary according to agronomic, environmental and disease pressure variables.



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES



FUNGICIDE

CROPS FOR USE

Barley
Oats
Triticale
Wheat
(durum, spring, winter)

PROVINCES

ON, QC, NB, NS,
NFLD, PEI

ACTIVE INGREDIENTS

Prothioconazole

- Group 3

Trifloxystrobin

- Group 11

FORMULATION

**Suspension
concentrate**

PACKAGING

7.1 L jug

Barley, oats, triticale,
wheat (durum, spring):
1 jug treats 30 ac.

Wheat (winter): 1 jug
treats 30 to 40 ac.

113.6 L tote

Barley, oats, triticale,
wheat (durum, spring):
480 ac.

Wheat (winter):
480 to 640 ac.

DISEASES CONTROLLED

BARLEY

Leaf rust
Net blotch
Powdery mildew
Scald
Stem rust
Stripe rust

OATS

Crown rust
Leaf blotch
Stem rust

TRITICALE

Scald
Stem rust

WHEAT
(durum, spring, winter)

Leaf rust
Powdery mildew
Septoria leaf blotch
Stem rust
Stripe rust
Tan spot

For full details, please reference
product label.

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 (Z 21 to Z 37). 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

APPLICATIONS	PRE-HARVEST INTERVAL (DAYS)
One application: Barley, Oats, Triticale, Wheat (durum, spring, winter)	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.
Two applications: Winter wheat	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.



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES

CROPS FOR USE

Barley
Oats
Wheat
(durum, spring, winter)

ACTIVE
INGREDIENTS

Prothioconazole

- Group 3

Tebuconazole

- Group 3

FORMULATION

Emulsifiable
concentrate

PACKAGING

10.12 L jug = 40 ac.

DISEASES
CONTROLLED

BARLEY

Net blotch

Powdery mildew

Rusts

(leaf, stem and stripe)

Scald

Septoria leaf blotch

Spot blotch

OATS

Crown rust

Stem rust

Septoria leaf 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.

Features and Benefits

- // TiMOR 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 TiMOR 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 TiMOR 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

- // TiMOR may not be applied within 36 days of harvest

CROPS FOR USE	FORMULATION	ON, QC, NB, NS, NFLD, PEI	INSECTS CONTROLLED
Barley Oats Wheat	Emulsifiable concentrate	Barley, oats, wheat: 1 L jug = 10 ac.	Cutworm Grasshopper
ACTIVE INGREDIENT Deltamethrin - Group 3	PACKAGING DECIS 50 EC BC, AB, SK, MB 2.4 L jug = 40 ac. 9.6 L jug = 160 ac.	(See label for details on rate ranges and pests.) DECIS 100 EC 1.2 L jug = 40 ac. 4.8 L jug = 160 ac.	For full details, please reference product label.

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

CROP	INSECT	50 EC RECOMMENDED RATE	100 EC RECOMMENDED RATE	ACRES PER JUG 50 EC	ACRES PER JUG 100 EC
Barley, Oats, Wheat	Cutworm	80 mL/ac.	40 mL/ac.	12 ac./1 L jug 30 ac./2.4 L jug 120 ac./9.6 L jug	30 ac./1.2 L jug 120 ac./4.8 L jug
Barley, Oats, Wheat	Grasshopper	60 mL/ac.	30 mL/ac.	16 ac./1 L jug 40 ac./2.4 L jug 160 ac./9.6 L jug	40 ac./1.2 L jug 160 ac./4.8 L jug

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:

CROP	PRE-HARVEST INTERVAL (DAYS)
Barley Wheat	40
Oats	31

Tank Mixes

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

Ethrel®

GROWTH REGULATOR

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)

For full details, please reference
product label.

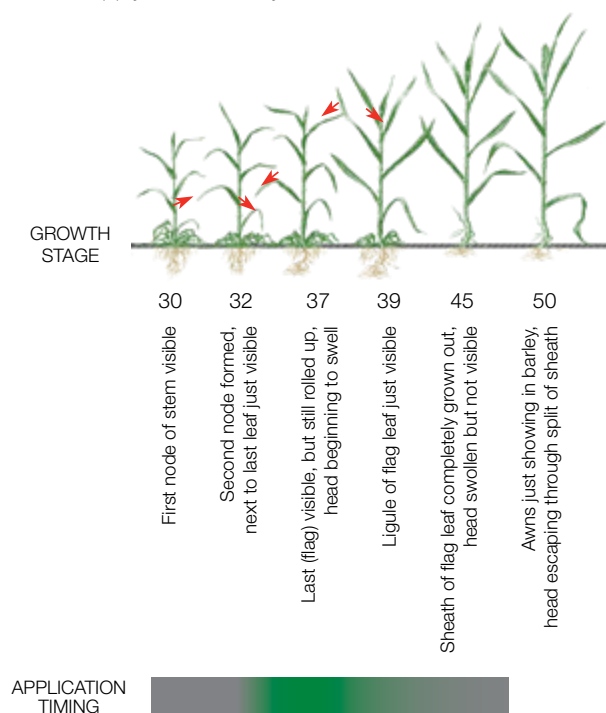
Application Guidelines

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

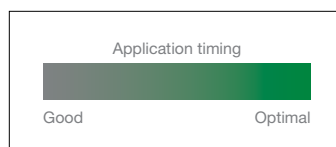
- // Recommended nozzle type is flat fan
- // Thorough and uniform coverage of the upper plant leaves is essential for optimal results
- // The spray boom must be a minimum of 50 cm (20 in.) above the crop canopy
- // Avoid overlaps while spraying
- // Do not apply Ethrel if the crop is under any type 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



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES



Corn

Crop Staging Guide

Traits

SmartStax RIB Complete

Trecepta RIB Complete

VT Double PRO RIB Complete

Seed Treatment

Accelaron Seed
Applied Solutions

Herbicides

Converge XT
Option Liquid

Roundup Xtend with
VaporGrip Technology
Vios G3

XtendiMax with
VaporGrip Technology

Fungicides

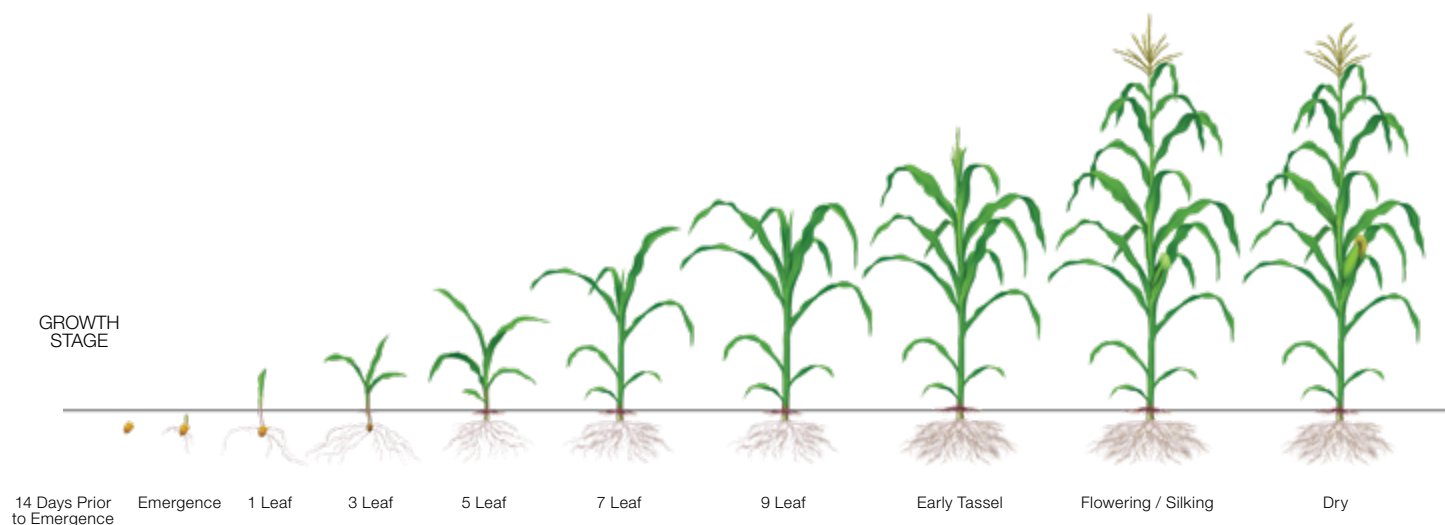
Proline

Stratego PRO

Insecticide

Decis

CORN CROP STAGING GUIDE



SEED TREATMENT

ACCELERON[™]
SEED APPLIED TREATMENT

APPLICATION TIMING

Application timing



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

One-pass option



Two-pass option



Post one-pass



decis

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

TRAITS

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

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

PRIMARY PESTS		SmartStax RIB COMPLETE	Optimum® AcreMax® Xtreme
ABOVE-GROUND	Black Cutworm (Agrotis ipsilon)	*	*
	Corn Earworm ¹ (Helicoverpa zea)	**	
	European Corn Borer (Ostrinia nubilalis)	***	**
	Fall Armyworm (Spodoptera frugiperda)	***	*
BELOW GROUND	Northern Corn Rootworm (Diabrotica barberi)	**	**
	Western Corn Rootworm (Diabrotica virgifera)	**	**
HERBICIDE TOLERANCE		Roundup Ready 2 Technology + LibertyLink®	Roundup Ready 2 Corn + LibertyLink®
REFUGE		5% RIB COMPLETE	5% IN THE BAG

*Single-mode activity **Dual-mode activity ***Triple-mode activity

Roundup Ready 2 Technology for broad-spectrum weed control

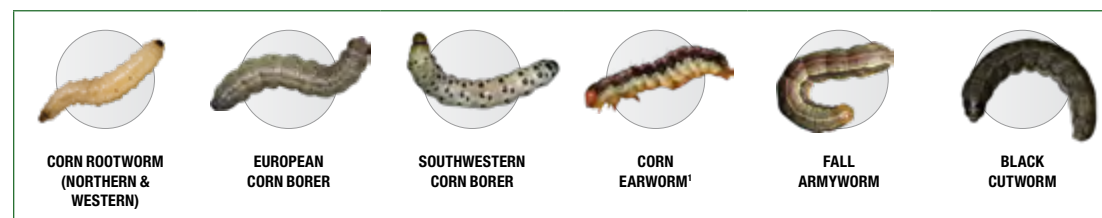
- // This product provides in-seed tolerance to Roundup agricultural herbicides

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.



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES

GET CLEANER EARS WITH BROAD-SPECTRUM PROTECTION AGAINST ABOVE-GROUND PESTS.

Trecepta technology combines the power of three different modes of action for broad-spectrum control of above-ground feeding pests, including Western bean cutworm.¹ This technology helps to put more grain in the bin and more money in the bank.

¹ 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.



$$\text{VT Double PRO RIB COMPLETE} + \text{Agrisure Viptera® Trait} = \text{Trecepta RIB COMPLETE CORN}$$

Modes of Action

Black Cutworm	-	1	1
Corn Earworm ²	2	1	3
European Corn Borer	2	-	2
Fall Armyworm	2	1	3
Western Bean Cutworm	-	1	1

²Cry1A.105 and Cry2Ab2 from B.t. controls or suppresses corn earworm.

TRAITS

DUAL MODES OF ACTION TO CONTROL ABOVE-GROUND PESTS WITH THE CONVENIENCE OF REFUGE IN THE BAG.

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 traisted acres across your entire farm

Powerful Protection from Problem Pests



EUROPEAN CORN BORER





CORN EARWORM



FALL ARMYWORM

Compare Your Above-Ground Protection Options

PRIMARY PESTS	Optimum [®] AcreMax ^{®2}	VT Double PRO RIB Complete Corn Blend ¹
Black Cutworm (Agrotis ipsilon)	*	
Corn Earworm ^{3,4} (Helicoverpa zea)		**
European Corn Borer (Ostrinia nubilalis)	**	**
Fall Armyworm (Spodoptera frugiperda)	*	**
HERBICIDE TECHNOLOGY	Roundup Ready Corn 2 / LibertyLink [®]	Roundup Ready 2 Technology
REFUGE	5% Refuge-in-a-Bag	5% Refuge-in-a-Bag
REFUGE EXAMPLES		

Modes of action equal control of pest.

** Dual-mode activity * Single-mode activity

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.



CROPS FOR USE

Corn

ACTIVE INGREDIENT
BASIC
 (ON, QC, NB, NS, NFLD)

Fluoxastrobin

- Group 11

Metalaxyl

- Group 4

Prothioconazole

- Group 3

STANDARD
 (ALL PROVINCES)

Clothianidan

- Group 4

Fluoxastrobin

- Group 11

Metalaxyl

- Group 4

Prothioconazole

- Group 3

STANDARD PLUS
DuPont™ Lumivia®
 seed treatment
 (ON, QC, NB, NS, NFLD, PEI)

Chlorantraniliprole

- Group 28

Fluoxastrobin

- Group 11

Metalaxyl

- Group 4

Prothioconazole

- Group 3

FORMULATION
Suspension concentrate
PACKAGING

- Commercially applied

DISEASES CONTROLLED

BASIC, STANDARD

Seed rot and pre-emergence damping off
- Caused by seed-borne *Aspergillus* spp. and *Penicillium* spp.
Seed rot and pre-emergence damping-off
- Caused by seed-borne and soil-borne *Fusarium* spp.
Post-emergence damping-off
- Caused by soil-borne *Fusarium* spp.
Seed rot and pre-emergence damping-off
- Caused by seed-borne *Cladosporium* spp. and *Aspergillus* spp.
Seed rots and seedling blights
- Caused by *Pythium* spp.**DISEASES SUPPRESSED**
Seed rot and pre-emergence damping-off
- Caused by *Penicillium* spp.**INSECT PROTECTION STANDARD**
Black cutworms
Corn flea beetle
Corn rootworm
 (Poncho® 1250 only)

Seedcorn maggot
Wireworms
White grubs

Poncho® 1250 offers control of corn rootworm plus enhanced control of cutworm, flea beetle, seed corn maggot and white grubs.

STANDARD PLUS
DuPont™ Lumivia®
Armyworm
Cutworms
European chafer
Seedcorn maggot
White grubs
Wireworms

For full details, please reference product label.

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
Insecticide	—	Poncho® clothianidin OR Lumivia® chlorantraniliprole
Fungicides/ Fungicides with Enhanced Disease Control	Acceleron D-281 fluoxastrobin Acceleron D-342 prothioconazole Acceleron® DX-309 metalaxyl	Acceleron D-281 fluoxastrobin Acceleron D-342 prothioconazole Acceleron DX-309 metalaxyl
Bio-Enhancer	—	BioRise™ 360 ST lipochitoooligosaccharide
Province	ON, QC NB, NS, PEI	All Provinces





HERBICIDE

CROPS FOR USE			
Corn (field and seed)	PACKAGING Each case contains 2.64 L Converge Flexx and 13.3 L Converge 480 Set-up rate - Each case treats 30 ac. Standard rate - Each case treats 20 ac. High rate - Each case treats 15 ac.	WEEDS CONTROLLED GRASS WEEDS Barnyard grass Fall panicum ² Green foxtail Large crabgrass Proso millet ² Smooth crabgrass Witchgrass Yellow foxtail BROADLEAF WEEDS Annual sow thistle Canada fleabane ^{2,4} Common ragweed ^{3,4} Dandelion (seedling) Eastern black nightshade Giant ragweed ^{2,4} Lady's-thumb Lamb's-quarters ³ Plantain (seedling) Redroot pigweed ³	Spiny annual sow thistle Tall waterhemp Velvetleaf Wild buckwheat Wild mustard Wormseed mustard ² Control with 178 mL/ac. (440 mL/ha), high rate only. ³ Includes Triazine and ALS-resistant biotypes. ⁴ Includes glyphosate-resistant biotypes. For full details, please reference product label.
PROVINCES BC, ON, QC, NB, NS, NFLD, PEI ACTIVE INGREDIENTS Atrazine ¹ - Group 5 Isoxaflutole - Group 27 ¹ Atrazine is a required tank-mix partner. It is packaged within the Converge XT case and is labeled Converge 480. FORMULATION Suspension concentrate			

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

TIME AFTER APPLICATION	CROPS
4 months	Winter wheat
1 year	Alfalfa, barley, canola, field corn, field peas, oats, potato, soybean, spring wheat, timothy, tomato*
2 years	Dry common beans (all types)

* 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).





HERBICIDE

CROPS FOR USE

Corn
(field)

PROVINCES

MB, ON, QC, NB, NS,
NFLD, PEIACTIVE
INGREDIENT
Foramsulfuron

- Group 2

FORMULATION
Oil dispersion

PACKAGING

Each 6.3 L jug treats
4.1 ha (10 ac.)WEEDS
CONTROLLED

GRASS WEEDS

Barnyard grass
Bristly foxtail
Fall panicum
Green foxtail
Large crabgrass
Long-spined sandbur
Proso millet
Quackgrass
Wire-stem muhly
Witchgrass
Yellow foxtail

BROADLEAF WEEDS

Common chickweed
Common ragweed
(suppression)
Eastern black
nightshade
Lamb's-quarters
Redroot pigweed
Velvetleaf
Wild mustard
Wormseed mustard

For full details, please reference
product label.

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





HERBICIDE

CROPS FOR USE

Corn
(field)

(do not apply to sweet corn,
corn grown for seed production,
or corn hybrids without
Roundup Ready 2 Technology)

ACTIVE
INGREDIENTS

Dicamba

- Group 4
Present as diglycolamine salt

Glyphosate

- Group 9
monoethanolamine salt

FORMULATION

Liquid concentrate

Water soluble

PACKAGING

2 x 10 L jugs

450 L tote

WEEDS
CONTROLLEDANNUAL 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

Flixweed

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
catchflyPennsylvania
smartweedPigweed (redroot,
Russian, smooth)Prickly lettuce,
ragweed (common,
false, giant)

Round-leaved mallow

Russian thistle

Shepherd's purse

Stinkweed

Stork's bill

Velvetleaf

Volunteer adzuki
beansVolunteer 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

Proso millet

Volunteer barley

Volunteer wheat

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

- // 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

// At 1 L/ac. = 0.45 L/ac. Roundup WeatherMAX + 0.35 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





HERBICIDE



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES

CROPS FOR USE

Corn
(field)

PROVINCES

ON, QC, NB, NS,
NFLD, PEIACTIVE
INGREDIENTS

Tembotrione

- Group 27

Thiencarbazone-
methyl

- Group 2

FORMULATION

Suspension
concentrate

PACKAGING

1.78 L jug
= 40 ac. (16.2 ha)WEEDS
CONTROLLED

GRASS WEEDS

Barnyard grass

Green foxtail

Large crabgrass

Witch grass

Yellow foxtail

BROADLEAF WEEDS

Chickweed

Eastern black
nightshade

Giant ragweed

Lady's-thumb

Lamb's-quarters

Hemp-nettle

Ragweed

Redroot pigweed

Spiny annual
sow thistle

Velvetleaf

Waterhemp

Wild buckwheat

Wild mustard

For full details, please reference
product label.

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

TIME AFTER APPLICATION	CROPS
0 months*	Field corn
4 months	Winter wheat
10 months	Alfalfa, canola, dry bean, field corn, field peas, oats, soybean, spring barley, spring wheat
22 months	Potato, sugar beet, tomato

* 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

Weed out herbicide resistance.
Vios G3 uses two different herbicide
Groups to help control resistant weeds.
Visit **MixItUp.ca** to learn more.





HERBICIDE

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 x 10 L jugs

450 L tote

WEEDS
CONTROLLEDANNUAL BROADLEAF
WEEDSBuckwheat
(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)Ragweed
(common, false, giant)

Velvetleaf

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/ac.

Note: 0.7 L/ac. 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/ac.

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/ac. 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/ac. 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



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES



FUNGICIDE

CROPS FOR USE

Corn
(field, pop, seed and sweet)

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
(40 AC.)

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.

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

Rate

- // 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

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.

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

CROP	PRE-HARVEST INTERVAL (DAYS)
Corn (field, pop and sweet)	14

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.



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

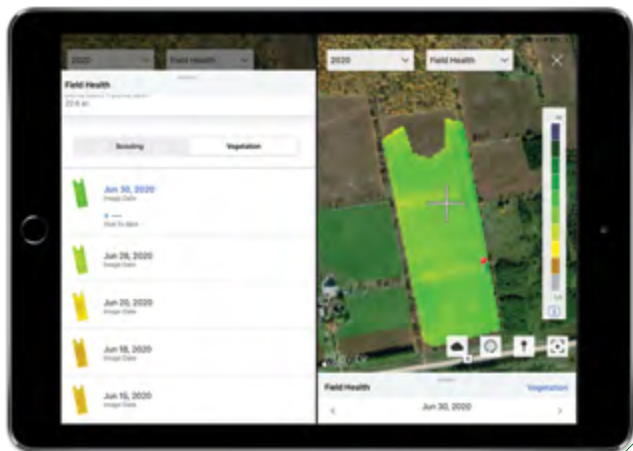
SOYBEANS

RESOURCES



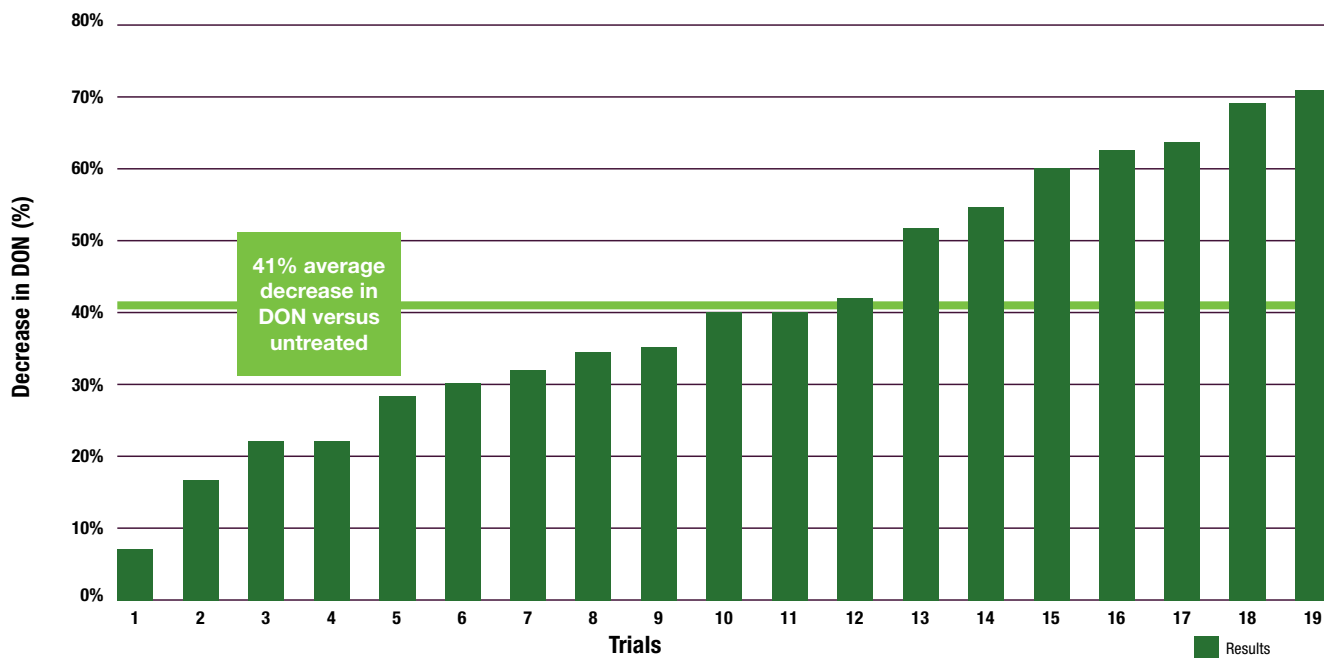
CLIMATE FIELDVIEW

Scouting tools, including field health imagery, can help monitor crop staging throughout the season. Keep notes on points of interest, which can easily be shared with your trusted advisors.



PROLINE APPLIED AT SILKING IN CORN

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



SOURCE: 19 Bayer and Grower Co-operator Trials (2008 to 2017).
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.



ROUNDUP

CANOLA

CEREALS

CORN

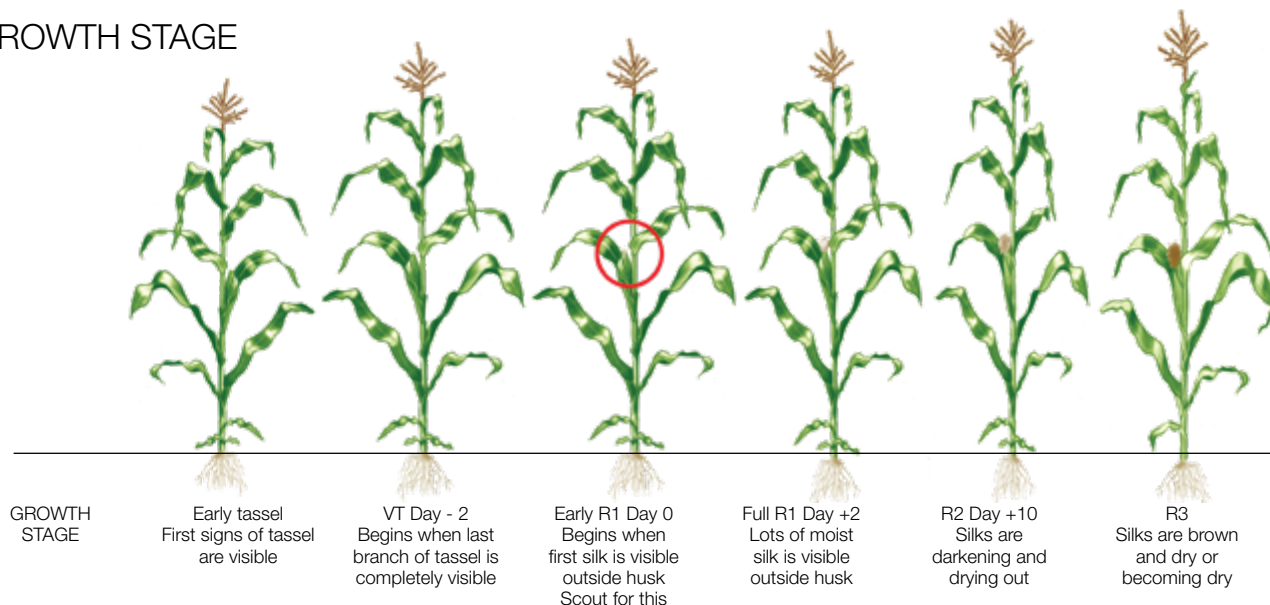
PULSES

SOYBEANS

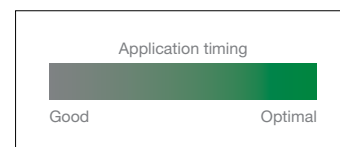
RESOURCES



GROWTH STAGE



APPLICATION TIMING



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES



FUNGICIDE

CROPS FOR USE

Corn
(field, pop, seed, sweet)

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.

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

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

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



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES

CROPS FOR USE

Corn
(field, seed, sweet)

ACTIVE INGREDIENT
Deltamethrin
- Group 3

FORMULATION
Emulsifiable concentrate

PACKAGING
DECIS 50 EC
BC, AB, SK, MB
2.4 L jug = 40 ac.
9.6 L jug = 160 ac.

ON, QC, NB, NS, NFLD, PEI
1 L jug = 10 ac.
(See label for details on rate ranges and pests.)

DECIS 100 EC
1.2 L jug = 40 ac.
4.8 L jug = 160 ac.

INSECTS CONTROLLED
Corn earworm
European corn borer
Western bean cutworm

For full details, please reference product label.

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					
CROP	INSECT	50 EC RATE RECOMMENDED RATE	100 EC RATE RECOMMENDED RATE	ACRES PER JUG 50 EC	ACRES PER JUG 100 EC
Corn	European corn borer	100 mL/ac.	50 mL/ac.	10 ac./1 L jug	24 ac./1.2 L jug
	Western bean cutworm			24 ac./ 2.4 L jug 96 ac./9.6 L jug	96 ac./4.8 L jug
Corn (sweet)	Corn earworm	100 mL/ac.	50 mL/ac.	10 ac./1 L jug 24 ac./ 2.4 L jug 96 ac./9.6 L jug	24 ac./1.2 L jug 96 ac./4.8 L jug



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:

CROP	PRE-HARVEST INTERVAL (DAYS)
Corn (field and seed)	1
Corn (sweet)	5

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

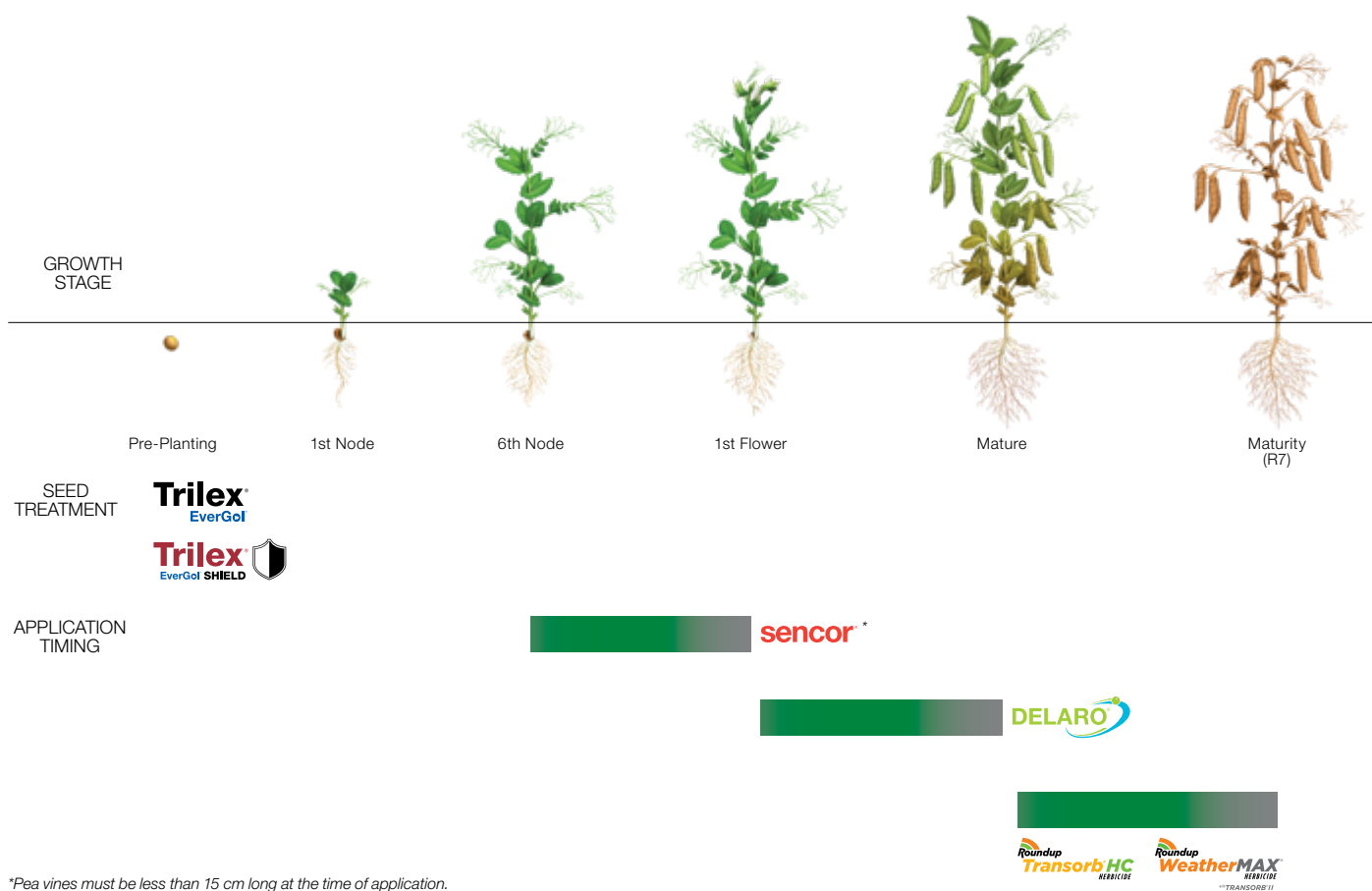
Proline GOLD

Propulse

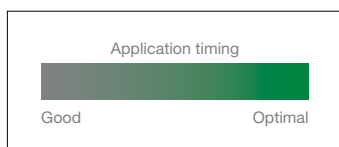
[Insecticide](#)

Decis

FIELD PEAS CROP STAGING GUIDE

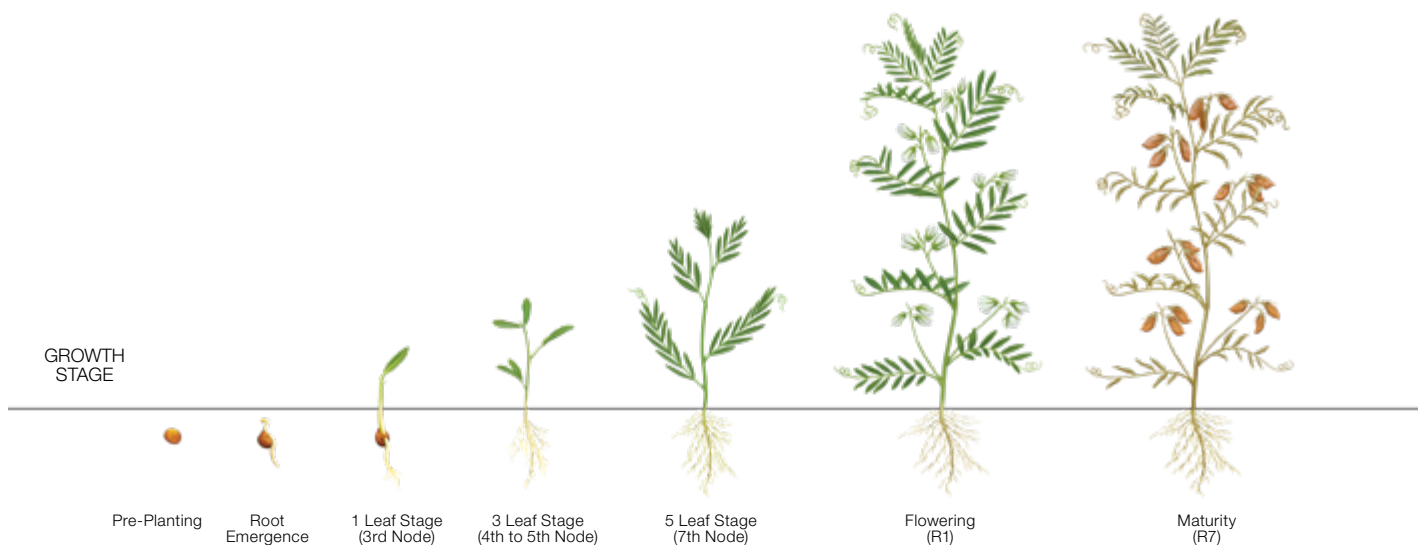


*Pea vines must be less than 15 cm long at the time of application.



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

LENTILS CROP STAGING GUIDE



SEED TREATMENT



APPLICATION TIMING



sencor



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



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.



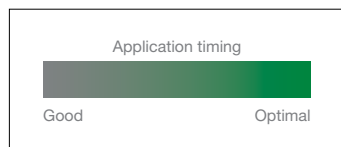
HERBICIDE

HERBICIDE



Timing based on insect pressure.

Apply when larvae are present and feeding.



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

CROPS FOR USE

Beans
Chickpeas
Field peas
Lentils

**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.

**TRILEX EVERGOL
AND TRILEX
EVERGOL SHIELD**

**DISEASES
CONTROLLED**

**Seed rot and
damping-off**

- Caused by *Fusarium*
spp. and *Rhizoctonia*
solani, including
Fusarium graminearum
and *Pythium* spp.

**Seed rot,
damping-off and
seedling blight**

- Caused by
seed-borne
Botrytis cinerea

**DISEASES
SUPPRESSED**

**Seed-borne
ascochyta blight**

- Caused by *Ascochyta*
spp.

**TRILEX
EVERGOL SHIELD**

**INSECT
PROTECTION**

Pea leaf weevil
Potato leafhopper
Wireworm

For full product details
please reference label.



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®

Trilex®
EverGol® SHIELD 

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

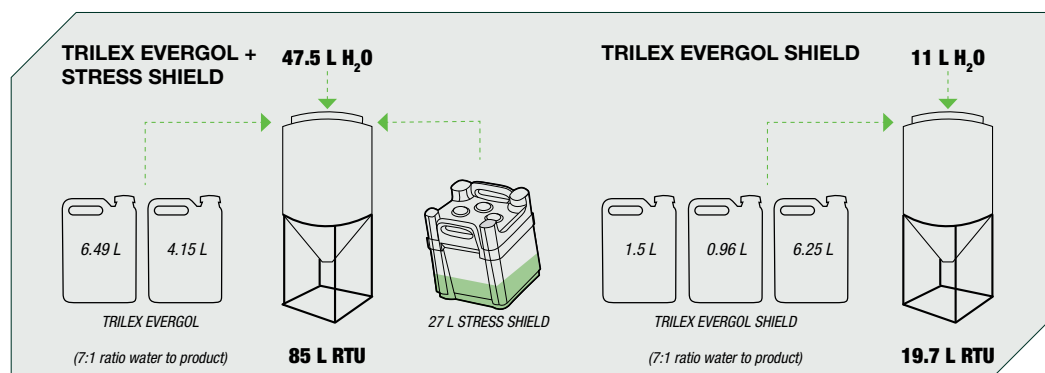
// 25 mL/100 kg of seed for Trilex component A
// 16 mL/100 kg of seed for Trilex component B
// 104 mL/100 kg of seed for Stress Shield*

* 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



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES


sencor®
HERBICIDE
CROPS FOR USE

 Chickpeas
Field peas
Lentils

PROVINCES
BC, AB, SK, MB

ACTIVE
INGREDIENT
Metribuzin

- Group 5

FORMULATION
Dry flowable

PACKAGING

 Each 2.5 kg jug
treats 6.7 to 17.9 ha
(16.5 to 44 ac.)

WEEDS
CONTROLLED

FIELD PEAS

Ball mustard
Chickweed
(including
Group 2-resistant
biotypes)

Corn spurry
Green smartweed
Hemp-nettle
(including
Group 2-resistant
biotypes)

Lamb's-quarters
Stinkweed
Tartary buckwheat
Volunteer canola
(including Clearfield®
volunteer canola)

Wild mustard
WEEDS
SUPPRESSED

 CHICKPEAS
AND LENTILS

Ball mustard
Chickweed
(including
Group 2-resistant
biotypes)

Corn spurry
Green smartweed
Hemp-nettle

 (including
Group 2-resistant
biotypes)

Lamb's-quarters
Stinkweed
Tartary buckwheat
Volunteer canola
(including Clearfield®
volunteer canola)

Wild mustard

 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.





FUNGICIDE

CROPS FOR USE		
Chickpeas Field peas Lentils	FORMULATION Suspension concentrate PACKAGING 7.1 L jug - 20 ac./jug 113.6 L tote - 320 ac./tote DISEASES CONTROLLED CHICKPEAS Ascochyta blight Grey mould White mould	FIELD PEAS Ascochyta blight Grey mould Mycosphaerella blight White mould LENTILS Anthracnose Ascochyta blight Grey mould White mould For full details, please reference product label.
PROVINCES BC, AB, SK, MB ACTIVE INGREDIENTS Prothioconazole - Group 3 Trifloxystrobin - Group 11		

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

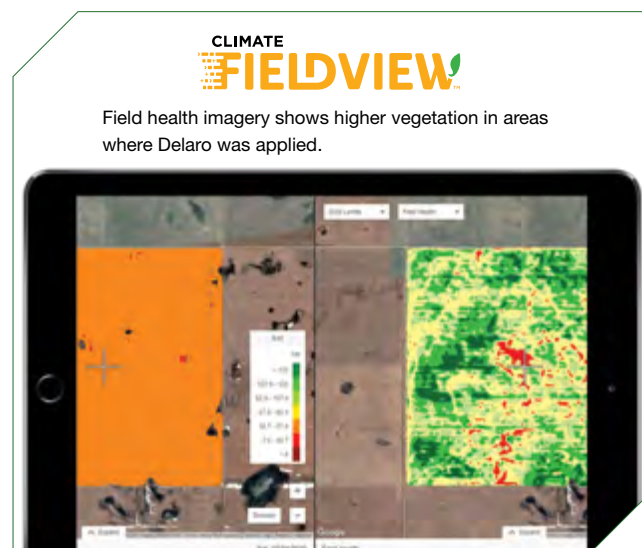
Application Timing

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

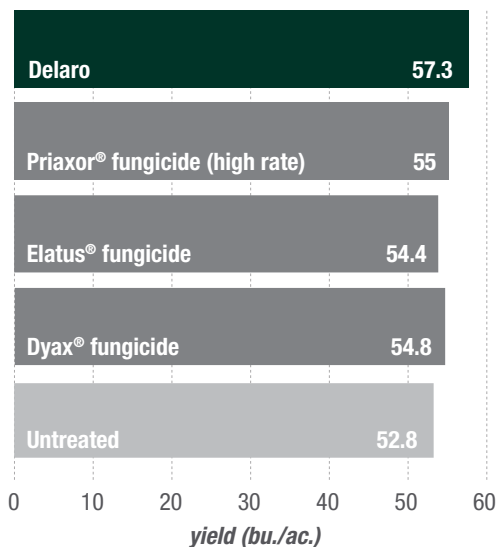
// Rainfast 1 hour after application

Pre-Harvest Interval

CROP	PRE-HARVEST INTERVAL (DAYS)
Chickpeas, Field peas, Lentils	30

2-Year Field Pea Fungicide Trials Summary

+4.5 bu./ac. versus untreated



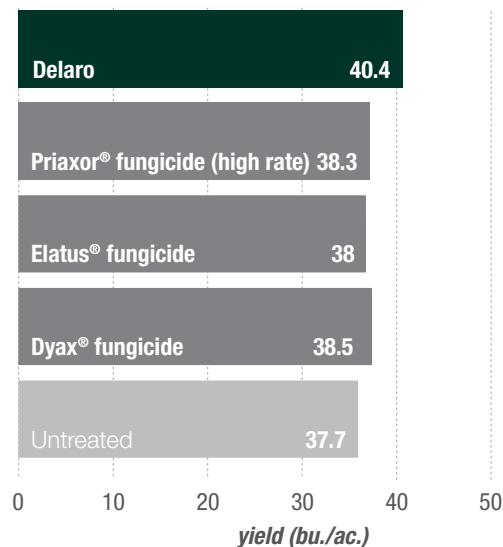
Tests showed an average of +4.5 bu./ac. (+8.5%) advantage for Delaro when compared to the untreated check.

To see local results, visit ItPaysToSpray.ca

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

2-Year Lentil Fungicide Trials Summary

+2.7 bu./ac. versus untreated



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



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES



FUNGICIDE

CROPS FOR USE

Chickpeas
Lentils

**ACTIVE
INGREDIENT**
Prothioconazole
- Group 3

FORMULATION
**Suspension
concentrate**

PACKAGING
5.1 L jug = 40 ac.

**DISEASES
CONTROLLED**
CHICKPEAS
Ascochyta

LENTILS
Ascochyta
White mould

For full details, please reference
product label.

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

CROP	PRE-HARVEST INTERVAL (DAYS)
Chickpeas Lentils	7



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES

CROPS FOR USE

Dry beans
(Broad, Lablab, *Lupinus*
spp., *Phaseolus* spp.,
Vigna spp.)

PROVINCES

BC, AB, SK, MB

**ACTIVE
INGREDIENTS**

Fluopyram
- Group 7
Prothioconazole
- Group 3

FORMULATION
Suspension
concentrate**PACKAGING**
10.12 L jug = 33 ac.**DISEASES
CONTROLLED**

Anthrachnose
Ascochyta blight
Asian soybean rust
White mould

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.



PROPULSE[®]

FUNGICIDE

CROPS FOR USE

Dry beans
(Broad, Lablab, *Lupinus*
spp., *Phaseolus* spp.,
Vigna spp.)

PROVINCES

BC, AB, SK, MB

ACTIVE INGREDIENTS

Fluopyram

- Group 7

Prothioconazole

- Group 3

FORMULATION

Suspension
concentrate

PACKAGING

10.12 L jug = 33 ac.

DISEASES CONTROLLED

Anthracnose

Ascochyta blight

Asian soybean rust

White mould

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 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.



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES

CROPS FOR USE	ACTIVE INGREDIENT	PACKAGING	INSECTS CONTROLLED
Lentils	Deltamethrin - Group 3	DECIS 50 EC 2.4 L jug 9.6 L jug (See label for details on rate ranges and pests.)	Cutworm Grasshopper
PROVINCES BC, AB, SK, MB	FORMULATION Emulsifiable concentrate	DECIS 100 EC 1.2 L jug = 40 ac. 4.8 L jug = 160 ac.	For full details, please reference product label.

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

CROP	INSECT	50 EC RECOMMENDED RATE	100 EC RECOMMENDED RATE	ACRES PER JUG 50 EC	ACRES PER JUG 100 EC
Lentil	Cutworm	80 mL/ac. in	40 mL/ac.	30 ac./2.4 L jug 120 ac./9.6 L jug	30 ac./1.2 L jug 120 ac./4.8 L jug
Lentil	Grasshopper	60 mL/ac. in	30 mL/ac.	40 ac./2.4 L jug 160 ac./9.6 L jug	40 ac./1.2 L jug 160 ac./4.8 L jug

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 time or early morning

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

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:

CROP	PRE-HARVEST INTERVAL (DAYS)
Lentils	30

Tank Mixes

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



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES

Soybeans

Crop Staging Guide

Traits

Roundup Ready 2 Xtend

Roundup Ready 2 Yield

XtendFlex

Seed Treatments

Accelaron Seed
Applied Solutions

Allegiance

EverGol Energy

Herbicides

Roundup Xtend with
VaporGrip Technology

Sencor

XtendiMax with
VaporGrip Technology

Fungicides

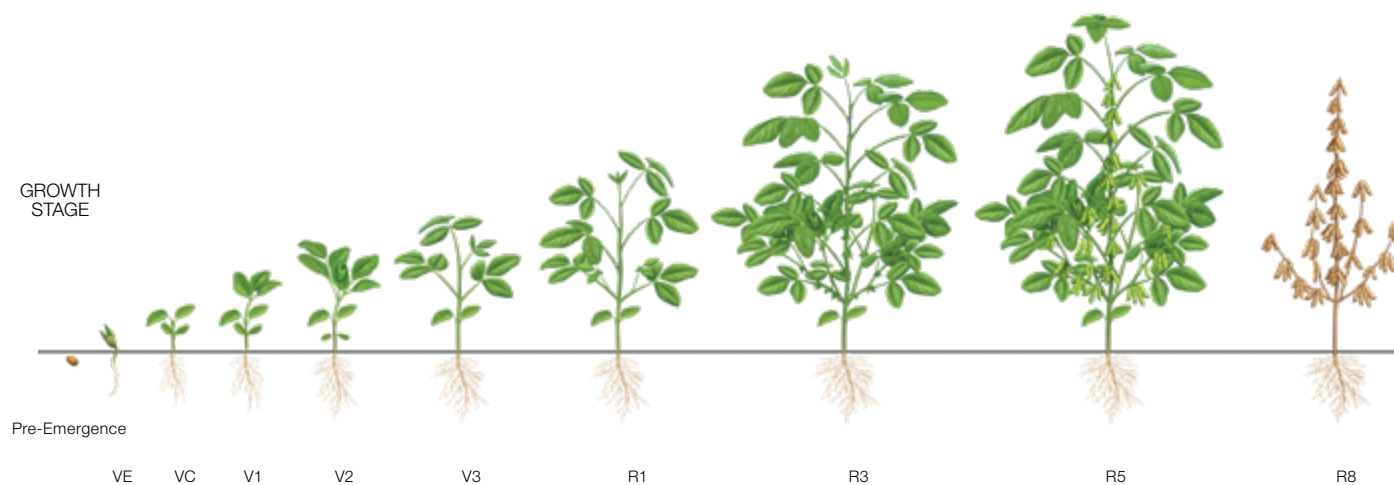
Delaro

Stratego PRO

Insecticide

Concept

SOYBEAN CROP STAGING GUIDE



SEED
TREATMENT

ACCELERON
SEED APPLIED SOLUTIONS

Allegiance

EverGol
Energy

STRESS SHIELD

APPLICATION
TIMING

sencor

Roundup
XTEND
with VaporGrip
Technology

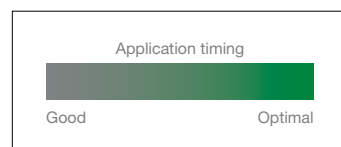
XTENDIMAX
with VaporGrip
Technology

STRATEGOPRO

DELARO

CONCEPT

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.



TRAITS

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

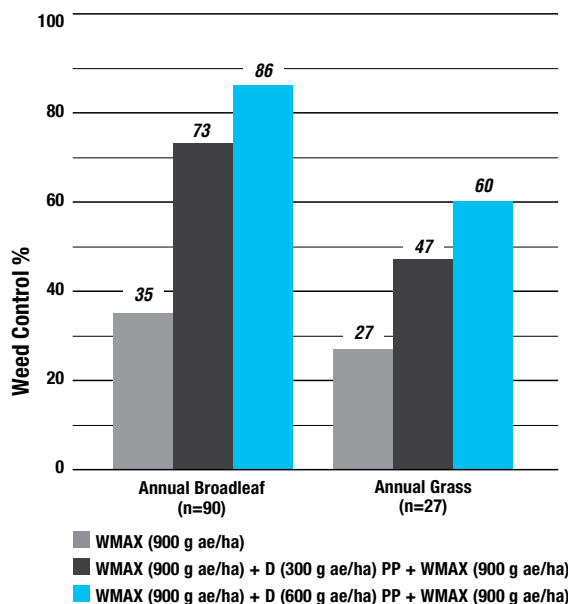
Residual activity for a wider window of weed control

- // 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

*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.

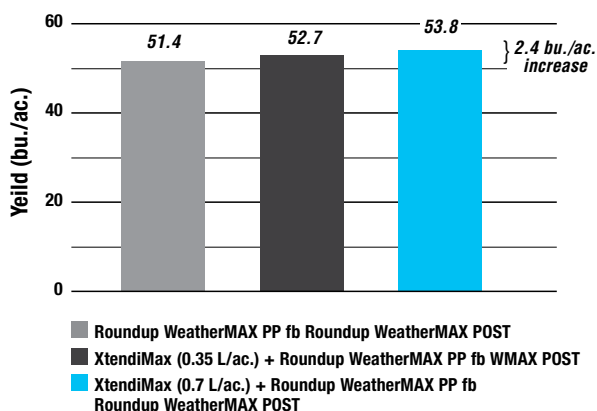
Pre-Plant Residual Weed Control



Extended activity on annual broadleaf and grass weeds from a pre-plant (PP) application of Roundup WeatherMAX (WMAX) and dicamba (D), 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.

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.

PP = pre-plant/pre-emerge

POST = post emergent application at 3rd trifoliate

fb= followed by Roundup WeatherMAX applied at 900 g/ha (0.67 L/ac.)

Source: 39 Bayer Market Development research trials (2008 to 2014).

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



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES



TRAITS

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



TRAITS

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



Untreated check



**PRE/At Planting:
Roundup Xtend herbicide with
VaporGrip Technology (2 L/ac.)**

Fierce® Herbicide (96 g/ac.)
Late Post: Liberty® 200 SN Herbicide (1 L/ac.)



**PRE/At Planting:
Roundup Xtend herbicide with
VaporGrip Technology (2 L/ac.)**

Late Post: Roundup WeatherMAX (0.67 L/ac.)

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.



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES

Allegiance®

SEED TREATMENT

CROPS FOR USE

Soybeans

ACTIVE INGREDIENT
Metalaxyl
- Group 4

FORMULATION
Suspension concentrate

PACKAGING
3.79 L jug and 60 L drum
- Commercially applied

DISEASES CONTROLLED
Early-season *Phytophthora* spp
Seed rots and seedling blights
- Caused by *Pythium* spp.

For full details, please reference product label.

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


CROP	ALLEGIANCE
Soybeans	46 to 93 mL/100 kg of seed

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.

CROPS FOR USE			
Soybeans	<p>PACKAGING 33.75 L drum</p> <ul style="list-style-type: none"> - Treats 2,290 bags of soybean seed - Commercially applied <p>DISEASES CONTROLLED Early-season root rot and seedling blight</p> <ul style="list-style-type: none"> - Caused by <i>Fusarium</i> spp., including <i>Fusarium graminearum</i> and <i>Rhizoctonia solani</i> 	<p>Seed rot / pre-emergent damping-off</p> <ul style="list-style-type: none"> - Caused by <i>Phomopsis longicolla</i> <p>Seed rot / pre-emergent damping-off and post-emergent damping-off</p> <ul style="list-style-type: none"> - Caused by <i>Fusarium</i> spp., including <i>Fusarium graminearum</i>, <i>Pythium</i> spp. and <i>Rhizoctonia solani</i> <p>Seedling blight</p> <ul style="list-style-type: none"> - Caused by seed-borne <i>Botrytis cinerea</i> 	<p>DISEASES SUPPRESSED Seed rot / pre-emergent damping-off</p> <ul style="list-style-type: none"> - Caused by seed-borne <i>Ascochyta rabiei</i> <p>For full details, please reference product label.</p>
<p>ACTIVE INGREDIENTS Metalaxyl</p> <ul style="list-style-type: none"> - Group 4 <p>Penflufen</p> <ul style="list-style-type: none"> - Group 7 <p>Prothioconazole</p> <ul style="list-style-type: none"> - Group 3 <p>FORMULATION Suspension concentrate</p>			

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

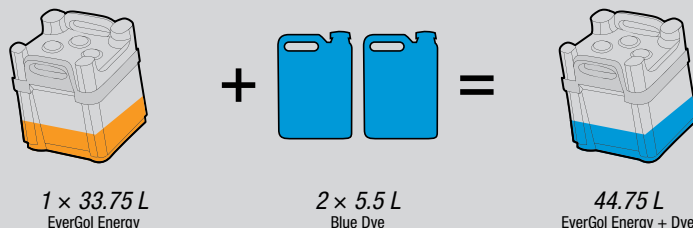
Tank Mixes

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

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.

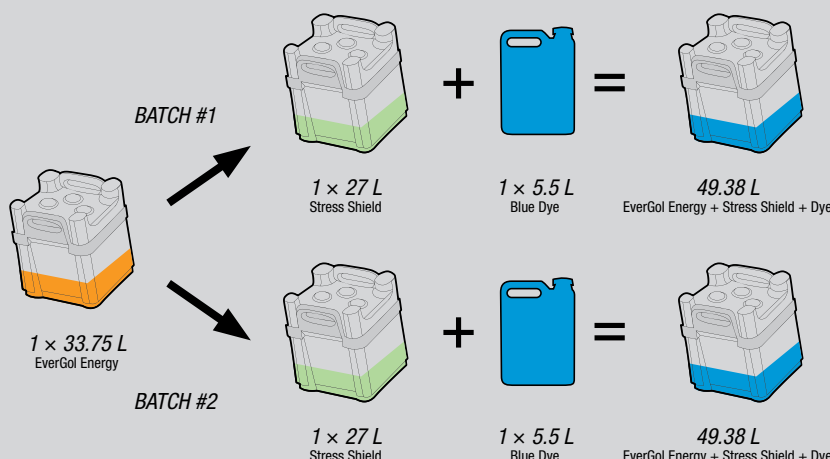
Each EverGol Energy unit comes with 2 × 5.5 L units of blue dye.



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.

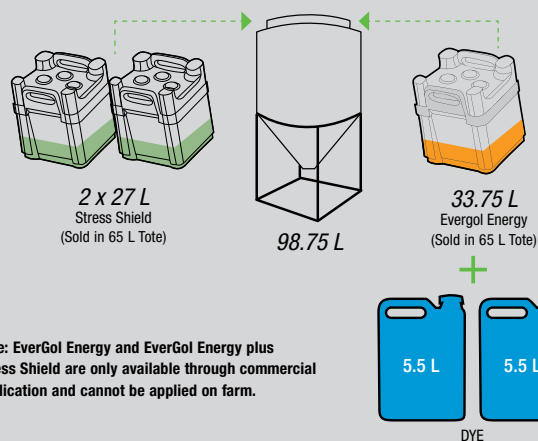
Each EverGol Energy unit comes with 2 × 5.5 L units of blue dye.



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.



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.



GROUP
4GROUP
9

HERBICIDE

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
CONTROLLEDANNUAL 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

Flixweed

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
catchflyPennsylvania
smartweedPigweed (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



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES



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.

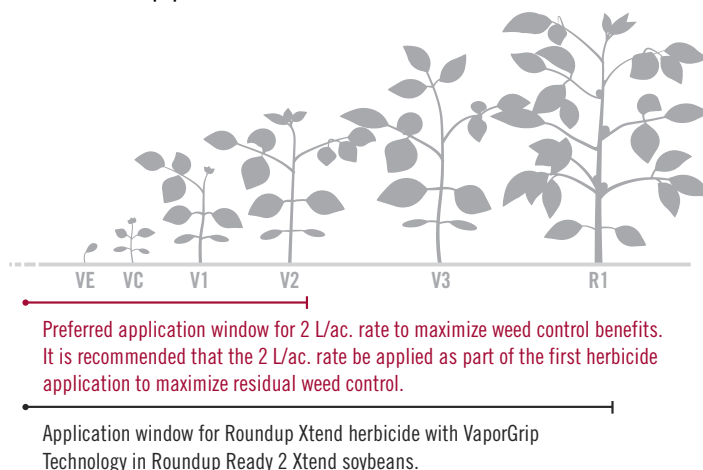
Post-emergence

- // 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.

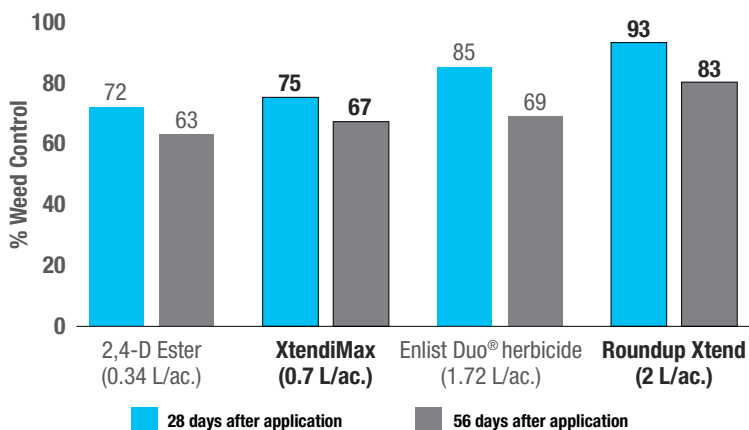
Application Window



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. Predominate 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.



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES



Glyphosate-Resistant Kochia Control Comparison



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



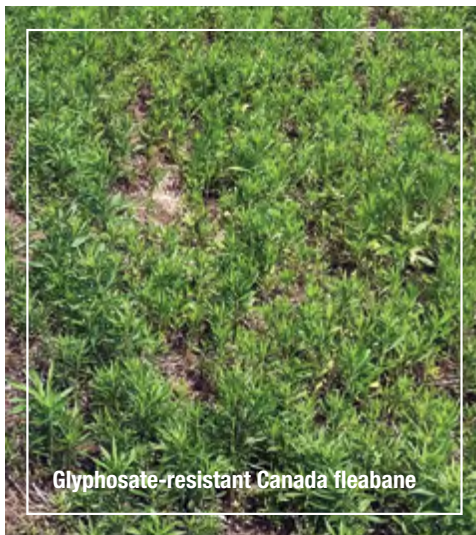
Enlist Duo® herbicide at 1.72 L/ac.

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.

sencor®

GROUP
5

HERBICIDE

CROPS FOR USE

Soybeans

ACTIVE
INGREDIENT

Metribuzin

- Group 5

FORMULATION

BC, AB, SK, MB

Dry flowable

ON, QC, NB, NS,
NFLD, PEI

Dry flowable

Liquid

PACKAGING

BC, AB, SK, MB

Each 2.5 kg jug
treats 6.7 to 17.9 ha
(16.5 to 44 ac.)ON, QC, NB, NS,
NFLD, PEIEach 2.5 kg jug
treats 1.7 to 4.5 ha
(4 to 11 ac.)Each 5 L jug
treats 2.2 to 5.9 ha
(5.5 to 14.5 ac.)WEEDS
CONTROLLED

GRASS WEEDS

Barnyard grass
Brome grass
Cheatgrass
Crabgrass
Fall panicumGiant foxtail
Goosegrass
Green foxtail
Johnson grass
(seedling)
Persian darnel
Stinkgrass
Wild oats
Witchgrass
Yellow foxtail

BROADLEAF WEEDS

Carpetweed¹
Cocklebur
Common chickweed
Common ragweed
Cow cockle
Dandelion (seedling)
Green smartweed
Hemp-nettle
Jimsonweed¹Knotweed
Lady's-thumb
Lamb's-quarter
Prickly mallow¹
Prostrate pigweed
Purslane
Redroot pigweed
Russian thistle
Shepherd's purse
Stinkweed²
Velvetleaf
Volunteer
non-triazine tolerant
canola
Wild buckwheat
Wild mustard
Wild potato vine
Yellow woodsorrel¹¹ Pre-emerge to weed.² Post-emerge to weed.For full details, please reference
product label.

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)



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES



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

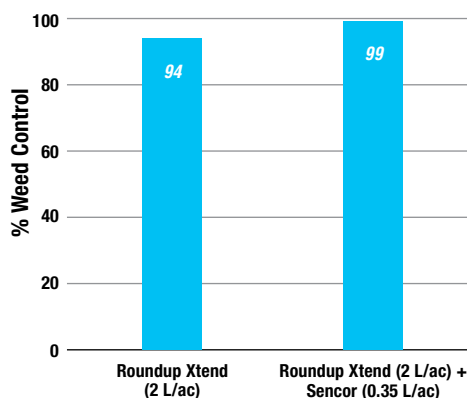
- // Apply as a pre-plant incorporation in combination with other herbicides
- // Single application – a 2.5 kg jug will treat 11 to 22.5 ac. at rates of 223 g/ac. and 111 g/ac.

ON, QC, NB, NS, NFLD, PEI

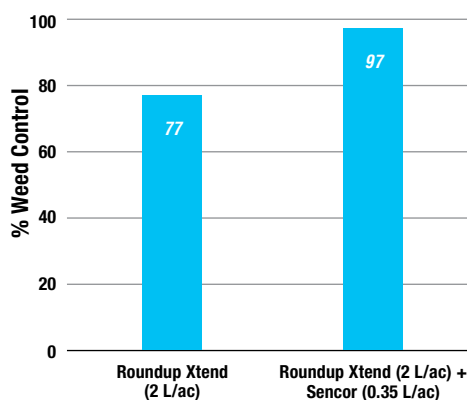
- // Apply as a pre-emergent broadcast spray or as a pre-plant incorporation
- // Single application – a 2.5 kg jug will treat 4 to 11 ac. at rates of 607 g/ac. and 223 g/ac. A 5 L jug will treat 5.5 to 14.5 ac. at rates of 911 mL/ac. and 344 mL/ac.

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

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



Broadleaf Weed Control – 56 days after application



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-ae/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.



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES

GROUP
4

HERBICIDE

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
CONTROLLEDANNUAL 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)**Ragweed** (common,
false, giant)**Velvetleaf**

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 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

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.

Post-emergence

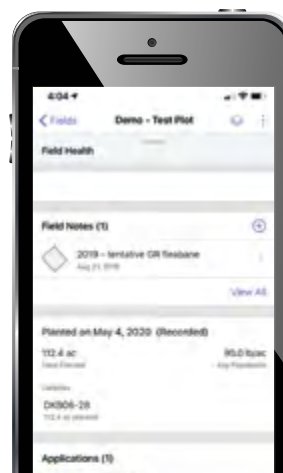
- // 0.33 or 0.7 L/ac.

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.



Reporting tools can help you manage weed resistance and easily review field history. In addition, keeping scouting notes and tracking your spray application products and rates for each field can help you see year-over-year trends and manage resistance.



ROUNDUP

CANOLA

CEREALS

CORN

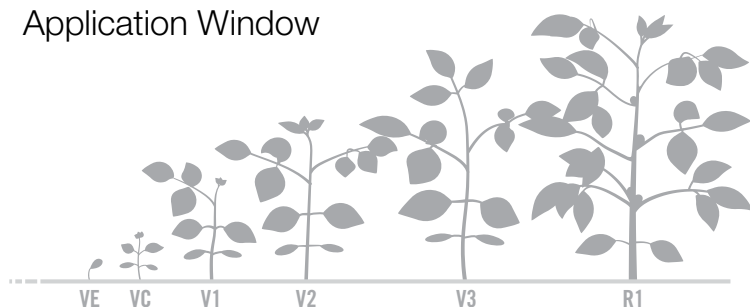
PULSES

SOYBEANS

RESOURCES



Application Window

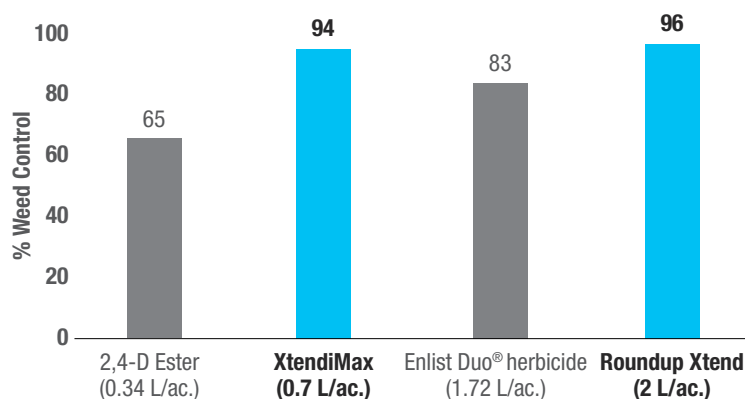


Preferred application window for 0.7 L/ac. rate to maximize residual weed control benefits.

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

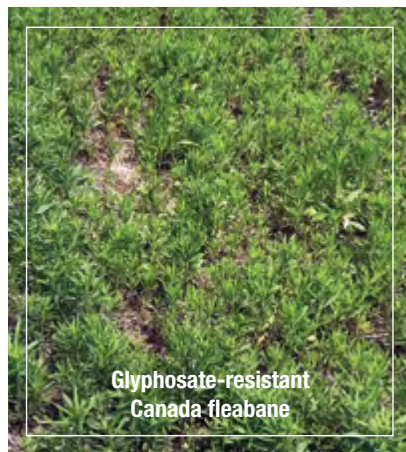


Source: 39 Canada Market Development Trials (2018 and 2019). Treatments were spring applied at the time of burndown and planting. Predominate species rated were Canada fleabane, kochia, lamb's-quarters and redroot pigweed. All rates are ai-ae/ha. Your results may vary depending on agronomic, environmental 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.



Soybeans

- **Prothioconazole**
- **Trifloxystrobin**

Suspension concentrate

7.1 L jug
- 30 ac./jug
113.6 L tote
- 480 ac./tote

Asian soybean rust
Brown spot
Frogeye leaf spot
Phomopsis stem
blight

Charcoal Rot
White mould

For full details, please reference product label.

- // 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

Rate

// 230 mL/ac. (572 mL/ha)

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

// 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).

Ground

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

Aerial

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

// Rainfast 1 hour after application

Pre-Harvest Interval

CROP	PRE-HARVEST INTERVAL (DAYS)
Soybean	20



FUNGICIDE

CROPS FOR USE

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
- // 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

CROP	PRE-HARVEST INTERVAL (DAYS)
Soybean	20



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES

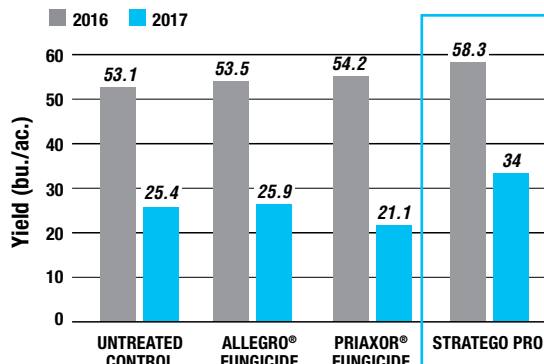


Stratego PRO on soybeans provided a 5.1 and 8.6 bu./ac. increase in 2016 and 2017 over the untreated check.

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

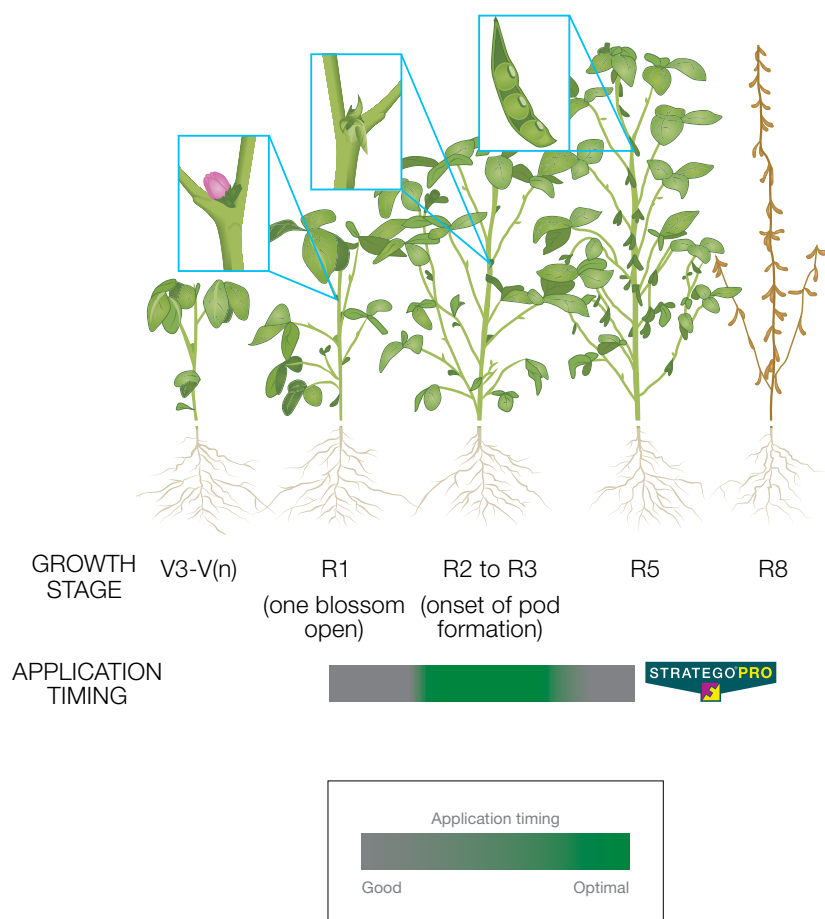


Source: 2 White mould trials, U of G, Dr. Chris Gillard, photo by Allan Kaastra. Reproduced with permission. Your results may vary depending on agronomic, environmental and disease pressure variables.



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.

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



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



INSECTICIDE

CROPS FOR USE

Soybeans

ACTIVE
INGREDIENTS

Deltamethrin
- Group 3
Imidacloprid
- Group 4

FORMULATION

Oil dispersion
Liquid concentrate

PACKAGING

5.26 L jug = 20 ac.

INSECTS
CONTROLLED

Bean leaf beetle
(suppression)
Japanese beetle
Soybean aphid

For full details, please reference
product label.

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



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES

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

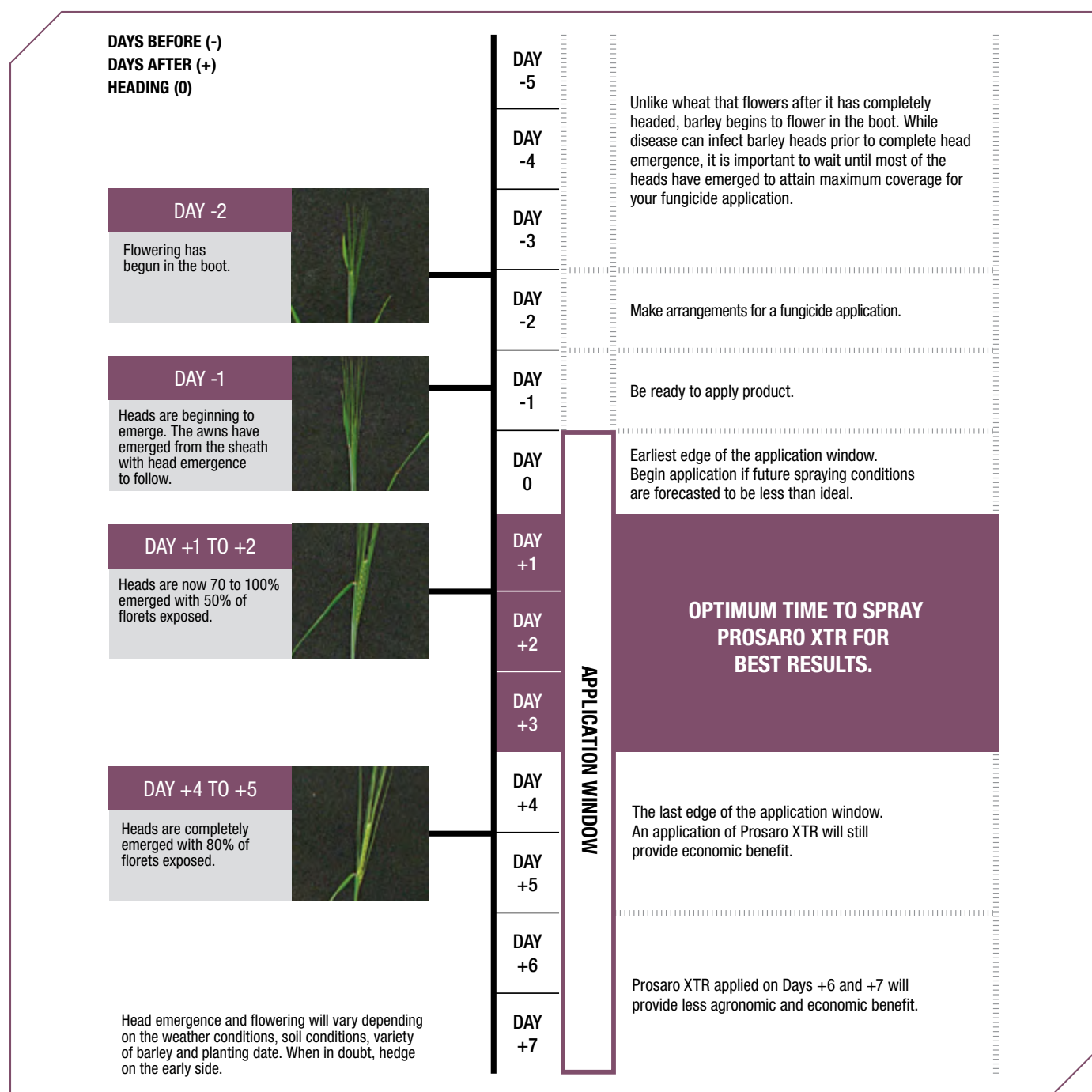
Temperature Consideration and Herbicide Application

W.A.M.L.E.G.S.

cereal Fungicide Head Timing guide

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).

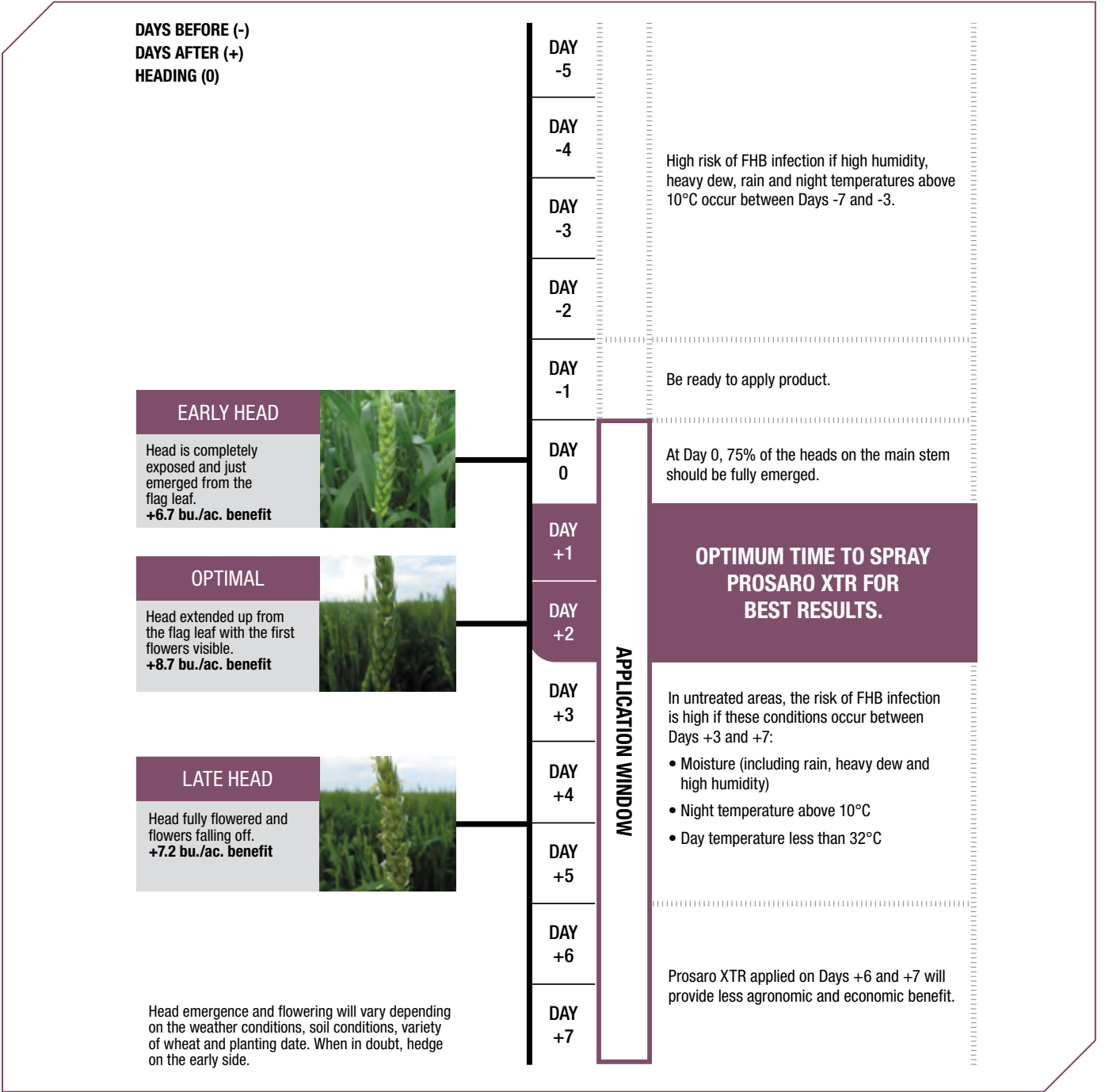


*Source: 11 Bayer grower-cooperated trials (2012, 2013 and 2016). Your results may vary depending on agronomic, environmental and pest pressure variables.

cereal Fungicide Head Timing guide

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).



*Source: 11 Bayer grower-cooperated trials (2012, 2013 and 2016). Your results may vary depending on agronomic, environmental and pest pressure variables.

GET THE MOST FROM YOUR APPLICATIONS THIS SEASON

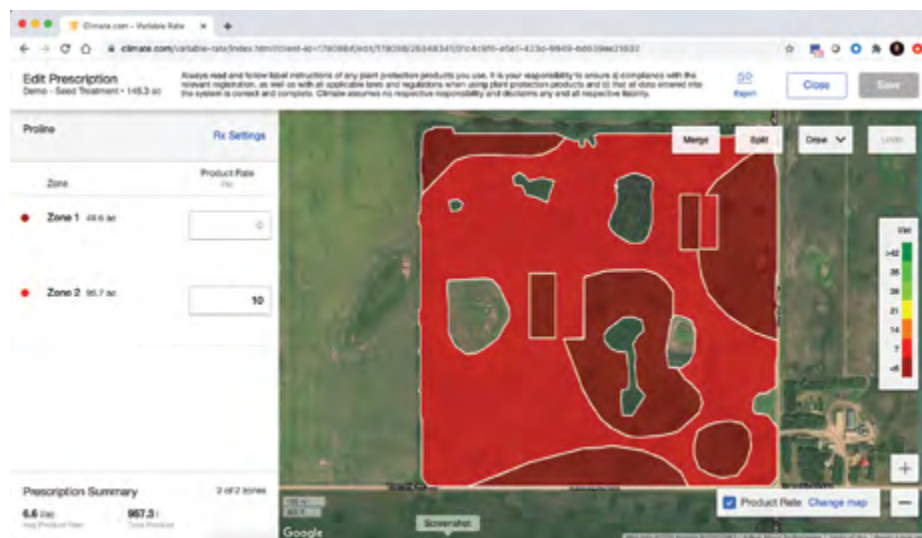
Using tools throughout the year sets up your applications for success.

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.



measurement index

METRICS IN WEED CONTROL

CONVERSION FACTORS COMMON TO WEED CONTROL

(ha)	Hectares = Acres × 0.405
(kPa)	Kilopascals = Pounds per square inch × 6.9
(km/h)	Kilometres per hour = Miles per hour × 1.61

BENCHMARKS

16 ha = 40 acres
64 ha = 160 acres
200 kPa = 29 pounds per square inch
250 kPa = 36 pounds per square inch
275 kPa = 40 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
1 mile = 5,280 feet = 1,610 metres = 1.61 kilometres

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
1 atmosphere = 760 millimetres of mercury; 14.7 pounds; 33.9 feet of water
1 pound per square inch (psi) = 0.070 kg/cm ² = 6.895 kPa (Kilopascal)

RATES OF FLOW FOR CALIBRATING SPRAY TIPS

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

USEFUL FORMULAS

$$\text{GPM} = \frac{\text{GPA} \times \text{MPH} \times W^*}{5,940}$$

(Per Nozzle)

$$\text{GPA} = \frac{5,940 \times \text{GPM}}{\text{MPH} \times W^*}$$

(Per Nozzle)

GPM = Gallons per Minute
GPA = Gallons per Acre

*W – Nozzle spacing (in boom spraying) or spray swath (in boomless spraying), in inches.

TRACTOR SPEEDS

Speed in MPH (Miles per hour)	Time Required in Seconds to Travel a Distance of:		
	100 feet	200 feet	300 feet
3.0	23.0	45.0	68.0
3.5	20.0	39.0	58.0
4.0	17.0	34.0	51.0
4.5	15.0	30.0	45.0
5.0	14.0	27.0	41.0
6.0	11.0	23.0	34.0
7.0	9.7	19.0	29.0
7.5	9.0	18.0	27.0
8.0	8.5	17.0	26.0
9.0	7.6	15.0	23.0
10.0	6.8	14.0	20.0
12.0	5.7	11.0	17.0
15.0	4.5	9.0	13.6
20.0	3.4	6.8	10.2

WEIGHTS AND MEASURES

US abbr.	Length Unit	Approx. Metric Equivalent
mi.	mile	1.609 kilometres
yd.	yard	0.9144 metres
ft. or '	foot	30.48 centimetres
in. or "	inch	2.54 centimetres
Area		
sq. mi. or mi. ²	square mile	2.59 square kilometres
ac.	acre	0.405 hectares or 4,047 square metres
sq. ft. or ft. ²	square foot	0.093 square metres
Volume/Capacity		
gal.	gallon	3.785 litres
qt.	quart	0.946 litres
pt.	pint	0.473 litres
fl. oz.	fluid ounce	29.573 millilitres or 28.416 cubic centimetres
bu.	bushel	35.238 litres
cu. ft. or ft. ³	cubic foot	0.028 cubic metres
Mass/Weight		
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	Lentils	= 60
Canola	= 50	Peas	= 60
Chickpeas	= 60	Rice	= 45
Corn	Shelled = 56	Rye	= 56
	Ear = 70	Sorghum	= 56
	Sweet = 50	Soybeans	= 60
		Sunflowers	= 24
Feed Bean	= 60	Oats	= 34
Flax	= 56	Wheat	= 60



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES

TO CONVERT	INTO	MULTIPLY BY
acres	rods	160
acres	hectares	0.4047
acres	sq. feet	43,560
acres	sq. metres	4,047
acres	sq. miles	1.562×10^{-3}
acre-feet	cu. feet	43,560
acre-feet	gallons	3.259×10^5
atmospheres	ton/sq. inch	0.007348
atmospheres	kg/sq. metre	10,332
atmospheres	pounds/sq. inch	14.70
bars	atmospheres	0.9869
bars	kg/sq. metre	1.020×10^4
bars	pounds/sq. feet	2,089
bushels	cu. feet	1.2445
bushels	cu. metres	0.03524
bushels	litres	35.24
bushels	pecks	4.0
bushels (60 lb.)/acre	kilograms/hectare	67.26
Centigrade	Fahrenheit	$(^{\circ}\text{C} \times 9/5) + 32$
centimetres	inches	0.3937
centimetres	metres	0.01
centimetres	miles	393.7
centimetres of mercury	atmospheres	0.01316
circumference	radians	6.283
cubic feet	cu. metres	0.02832
cubic feet	gallons	7.48052
cubic feet	litres	28.32
cubic feet/min.	gallons/sec.	0.1247
cubic feet/min.	litres/sec.	0.4720
cubic metres	gallons	264.2
cubic metres	litres	1,000
cubic metres/hectare	cu. feet/acre	14.2916
fathom	metres	1.828804
fathom	feet	6.0
feet	metres	0.3048
feet/sec.	km/hr.	1.097
feet/sec.	miles/hr.	0.6818
footcandle	lumen/sq. metre	10.764
furlongs	miles	0.125
gallons	litres	3.785
gallons/acre	litres/hectare	9.354
gallons	pounds of water	8.3453
gallons/min.	cu. feet/sec.	$2,228 \times 10^{-3}$
gallons/min.	litres/sec.	0.06308
grams	ounces (avdp)	0.03527
grams	pounds	2.205×10^{-3}
grams/hectare	ounces/acre	0.01428
grams ai/hectare	pounds ai/acre	0.00089
grams/litre	pounds/1,000 gal.	8.345
grams/litre	parts/million	1,000
grams/litre	pounds/gallon	0.008

TO CONVERT	INTO	MULTIPLY BY
hectares	acres	2.471
hundred weight/acre	kilograms/hectare	125.6
inches	centimetres	2.54
inches of mercury	atmospheres	0.03342
kilograms	pounds	2.205
kilograms/hectare	pounds/acre	0.8922
kilometres	miles	0.6214
knots	kilometres/hr.	1.8532
knots	miles/hr.	1.151
litres/hectare	fluid ounces/acre	13.68
litres/hectare	gallons/acre	0.1069
litres	gallons	0.2642
metres	inches	39.37
metres	feet	3.281
metres/sec.	kilometres/hr.	3.6
metres/sec.	miles/hr.	2.237
miles	feet	5,280
miles	kilometres	1.609
ounces	grams	28.349527
ounces	pounds	0.0625
ounces (fluid)	litres	0.02957
ounces (fluid)	millilitres	29.573
peck (US)	bushels	0.25
pints	litres	0.4732
pounds	grams	453.5924
pounds	kilograms	0.4536
pounds of water	gallons	0.1198
pounds/acre	kilograms/hectare	1.121
pounds/gallon	grams/litre	119.8
quarts	litres	0.9463
rods	feet	16.5
sq. centimetres	sq. inches	0.155
sq. feet	sq. metres	0.093
sq. feet	sq. yards	0.1111
sq. kilometres	acres	247.1
sq. kilometres	sq. miles	0.3861
sq. metres	sq. feet	10.76
sq. miles	acres	640.0
sq. miles	sq. kilometres	2.59
sq. yards	sq. feet	9.0
sq. yards	sq. metres	0.8361
temperature ($^{\circ}\text{C}$) + 17.78	temperature ($^{\circ}\text{F}$)	1.8
temperature ($^{\circ}\text{F}$) - 32	temperature ($^{\circ}\text{C}$)	0.56
tons (metric)	kilograms	1,000
tons (metric)	pounds	2,205
tons	tons (metric)	0.9078
tons (2,000 lb.)/acre	metric tons/hectare	2.242
yards	metres	0.9144



product reference guide

HERBICIDES																	
CROP	Barley, Canary seed, Corn, Established timothy grass, Flax, Oats, Rye, Seedling grasses, Wheat (durum, spring, winter)	Corn (field and sweet)	Barley, Bromegrass, Perennial ryegrass, Red fescue, Timothy, Triticale, Wheat (durum, spring, winter)	Barley, Bromegrass, Perennial ryegrass, Red fescue, Timothy, Triticale, Wheat (durum, spring, winter)	Wheat (durum, spring, winter)	Wheat (durum, spring, winter)	Corn (field)	Alfalfa, Barley, Canary seed, Canola (preburn only), Fall rye, Field corn, Flax, Grain sorghum, Millet, Oats, Seedling grasses, Sweet corn, Triticale, Wheat	Barley (spring), Meadow bromegrass, Seedling perennial ryegrass, Wheat (durum, spring)	Roundup Ready 2 Technology Corn, Roundup Ready 2 Xtend soybeans	Chickpeas, Field peas, Lentils, Soybeans	Barley, Wheat (durum, spring, winter)	Barley, Wheat (durum, spring)	Wheat (durum, spring, winter)	Wheat (durum, spring, winter)	Corn (field)	Corn (field), Roundup Ready 2 Xtend soybeans
GROUP	4, 6	5, 27	6, 27	4, 6, 27	2	2	2	6	1	4, 9	5	4, 6	1, 6, 27	2	2, 6, 27	2, 27	4
PRODUCT	Buctril M	Converge XT	Infinity	Infinity FX	Luxxur	Olympus System	Option Liquid	Pardner	Puma Advance	Roundup Xtend with VaporGrip Technology	Sencor	Thumper	Tundra	Varro	Velocity m3	Vios G3	XtendiMax with VaporGrip Technology
American nightshade																	
Annual sow thistle																	
Ball mustard																	
Barnyard grass																	
Bluebur																	
Bristly foxtail																	
Canada fleabane																	
Canada thistle																	
Canary seed																	
Carpetweed																	
Cheatgrass																	
Chickweed																	
Cleavers																	
Cocklebur																	
Common buckwheat																	
Common chickweed																	
Common groundsel																	
Common hemp-nettle																	
Common ragweed																	
Common waterhemp																	
Corn spurry																	
Cow cockle																	
Crabgrass																	
Dandelion																	
Downy brome																	
Eastern black nightshade																	
Fall panicum																	
Flixweed																	
Foxtail barley																	
Giant foxtail																	
Giant ragweed																	
Green foxtail																	
Green smartweed																	
Hemp-nettle																	
Japanese brome																	

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

■ Control ■ Suppression

HERBICIDES																	
Product	Buctril M	Converge XT	Infinity	Infinity FX	Luxxur	Olympus System	Option Liquid	Pardner	Puma Advance	Roundup Xtend with VaporGrip Technology	Sencor	Thumper	Tundra	Varro	Velocity m3	Vios G3	XtendiMax with VaporGrip Technology
Jimsonweed																	
Johnson grass (seedling)																	
Kochia																	
Lady's-thumb																	
Lamb's-quarters																	
Large crabgrass																	
Long-spined sandbur																	
Narrow-leaved hawk's beard																	
Night-flowering catchfly																	
Pale smartweed																	
Perennial sow thistle																	
Persian dandel																	
Plantain (seedling)																	
Prickly mallow																	
Proso millet																	
Prostrate pigweed																	
Quackgrass																	
Redroot pigweed																	
Round-leaved mallow																	
Russian thistle																	
Scentless chamomile																	
Shepherd's-purse																	
Smooth crabgrass																	
Spiny annual sow thistle																	
Spreading atriplex																	
Stinkweed																	
Tall waterhemp																	
Tartary buckwheat																	
Velvetleaf																	
Volunteer canola										*							*
Volunteer flax																	
Volunteer soybean																	
Volunteer sunflower																	
Wild buckwheat																	
Wild mustard																	
Wild oats																	
Wild potato vine																	
Wild tomato																	
Wire-stemmed muhly																	
Witchgrass																	
Wormseed mustard																	
Yellow foxtail																	
Yellow woodsorrel																	

*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.

Control Suppression

product reference guide

FUNGICIDES

Diseases	Delaro	Folicur EW	Proline	Proline GOLD	Propulse	Prosaro XTR	Stratego PRO	TiMOR
Anthrachnose								
Ascochyta blight								
Asian soybean rust								
Black stem								
Brown spot								
Charcoal rot								
Common rust								
Crown rust								
Eyespot								
Frogeye leaf spot								
Fusarium ear rot								
Fusarium head blight								
Gibberella ear rot								
Glume blotch								
Grey leaf spot								
Grey mould								
Leaf rust				*				
Mycosphaerella blight								
Net blotch								
Northern corn leaf blight								
Phomopsis stem blight								
Powdery mildew								
Scald								
Sclerotinia/white mould								
Septoria leaf blotch								
Southern corn rust								
Spot blotch								
Stalk rot pathogens								
Stem rust								
Stripe rust								
Tan spot								

*bushberries

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

■ Control ■ Suppression

INSECTICIDES

Insects	Concept	Decis
Bean leaf beetle		
Bertha armyworm		
Corn earworm		
Cutworm		
Diamondback moth		
European corn borer		
Flea beetle		
Grasshopper		
Japanese beetle		
Lygus bug		
Soybean aphid		
Western bean cutworm		

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

■ Control ■ Suppression



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES

SEED TREATMENTS

Insects	Acceleron Standard Poncho® 1250 (Corn)	Acceleron Standard plus Lumivia® (Corn)	Acceleron (Soybean)	BUTE0 start	Prosper EverGol	Stress Shield
Armyworm						
Bean leaf beetle						
Black cutworm						
Corn flea beetle						
Corn rootworm						
European chafer (white grub)						
Flea beetles (crucifer, striped)						
Japanese beetle (white grub)						
June beetle (white grub)						
Pea leaf weevil						
Potato leaf hopper						
Seedcorn maggot						
Soybean aphid						
White grubs						
Wireworms						

Diseases	Acceleron Standard Poncho® 1250 (Corn)	Acceleron Standard plus Lumivia® (Corn)	Acceleron (Soybean)	EverGol Energy	Prosper EverGol	Raxil PRO	Trilex EverGol
<i>Alternaria</i> spp. (seed-borne)							
<i>Ascochyta</i> (seed-borne)							
<i>Aspergillus</i> spp. (seed-borne)							
Blackleg (seed-borne)							
<i>Botrytis cinerea</i> (seed-borne)							
Bunt							
<i>Cladosporium</i> spp. (seed-borne)							
<i>Cochliobolus</i> (seed-borne)							
<i>Cochliobolus</i> (soil-borne)							
<i>Fusarium</i> spp. (seed-borne)							
<i>Fusarium</i> spp. (soil-borne)							
Leaf stripe							
<i>Rhizoctonia solani</i>							
Smut							
<i>Penicillium</i> spp. (seed-borne)							
Phomopsis							
<i>Pythium</i> spp. (soil-borne)							

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

■ Control ■ Suppression

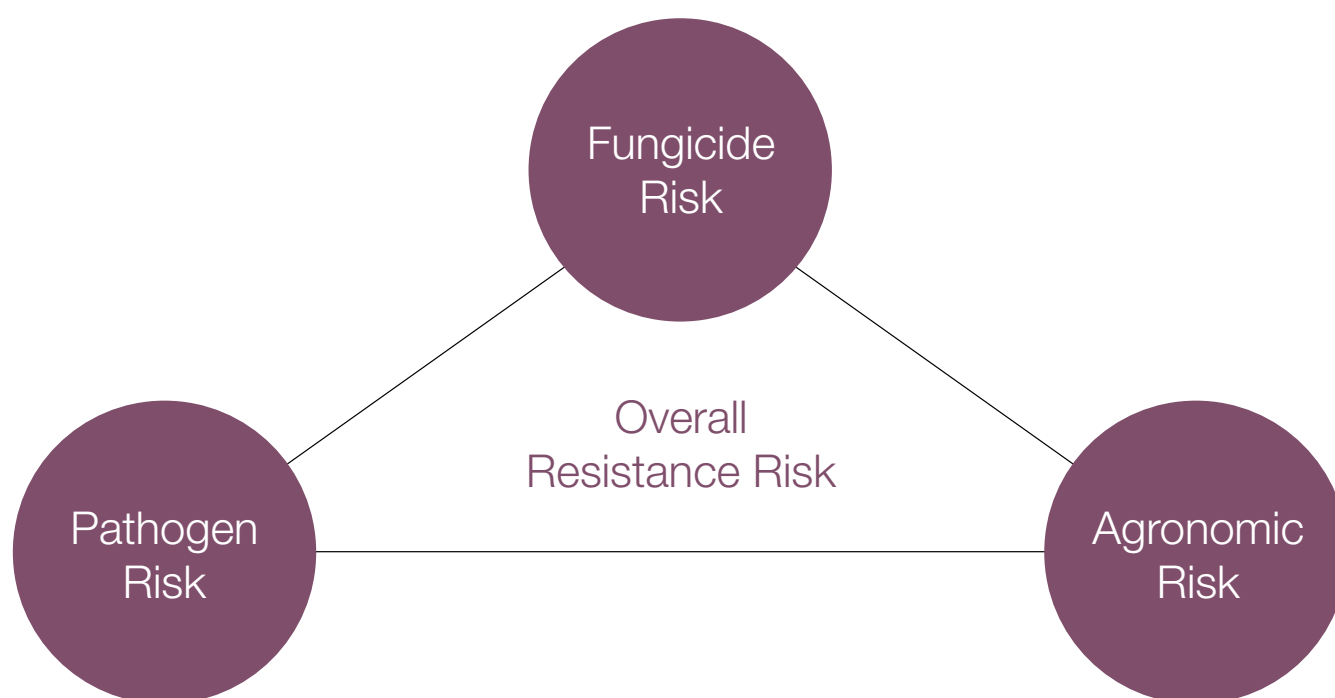
CONTACT INFORMATION

Call **1 888-283-6847** for more information or to find out who the sales representative is in your area.

Resistance MANAGEMENT: Combined Fungicide Resistance Risk

There are only three major modes of action (MOAs) used on field crops in Canada. We need to dig deeper to understand and assess the true risk of developing fungicide resistance.

When evaluating the potential for fungicide resistance, scientists focus on three categories of risk:



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 CLASS	FUNGICIDE RISK	AGRONOMIC RISK						
		Low	High	Low	High	Low	High	
Group 1 Group 2 Group 4 Group 11	High = 6	3	6	6	12	9	18	COMBINED RISK
Group 3 Group 7 Group 9	Medium = 3	1.5	3	3	6	4.5	9	
Multi Sites Resistance Indicated	Low = 1	0.5	1	1	2	1.5	3	
PATHOGEN RISK		Low = 1		Medium = 2		High = 3		
PATHOGEN GROUPS		Fusarium head blight Pythium root rot Rhizoctonia Rusts Sclerotinia		Anthracnose Ascochyta blight Mycosphaerella leaf spot Net blotch Septoria leaf spot Tan spot		Alternaria Grey mould Powdery mildew		

Source: www.frac.info
Reproduced with permission.

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?
- // High spore production?
- // Soil versus wind dispersal?
- // Infects all growth stages of the crop?
- // Does the pathogen have a sexual stage?
If asexual, is the risk lower?
- // Relative fitness after mutation?
- // Do they overwinter?

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.*

HIGH RISK PATHOGEN = 3	CROP	DISEASE EXAMPLES
<i>Alternaria alternata</i>	Various	Alternaria
<i>Blumeria graminis</i>	Wheat/barley	Powdery mildew
<i>Botrytis cinerea</i>	Various (lentils)	Grey mould
MEDIUM RISK PATHOGEN = 2	CROP	DISEASE EXAMPLES
<i>Ascochyta</i> spp.	Various (pulses)	Ascochyta blight
<i>Colletotrichum</i> spp.	Various (pulses)	Anthracnose
<i>Mycosphaerella pinodes</i>	Peas	Mycosphaerella leaf spot
<i>Pyrenophora teres</i>	Barley	Net blotch
<i>Pyrenophora tritici-repentis</i>	Wheat	Tan spot
<i>Septoria tritici</i>	Wheat	Septoria leaf spot
LOW RISK PATHOGEN = 1	CROP	DISEASE EXAMPLES
<i>Fusarium</i> spp.	Various	Fusarium head blight
<i>Puccinia</i> spp.	Various	Rusts
<i>Pythium</i> spp.	Various	Pythium root rot
<i>Rhizoctonia</i> spp.	Various	Rhizoctonia
<i>Sclerotinia sclerotiorum</i>	Various (canola/lentils)	Sclerotinia

* The listed pathogens may infect other crops that have not been listed.
Source: www.frac.info
Reproduced with permission.

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.

Fungicide Resistance Action Committee (FRAC)
Classification of Fungicide Resistance Risk*

HIGH RISK = 6	Group 11 QoI (Strobilurins) Azoxystrobin Picoxystrobin Pyraclostrobin Trifloxystrobin
	Group 1 MBC (Benzimidazole) Thiabendazole TPM
	Group 4 (Phenylamides) Metalaxyl
MEDIUM TO HIGH RISK = 3	Group 7 SDHIs Boscalid Penflufen Fluopyram Sedaxane Fluxapyroxad
	Group 2 (Dicarboxamides) Iprodione
MEDIUM RISK = 3	Group 3 DMIs (Triazoles) Metconazole Prothioconazole Propiconazole Tebuconazole
	Group 9 AP (Anilino Pyrimidines) Cyprodinil Pyrimethanil
LOW TO MEDIUM RISK = 1	Group 40 CAA (Carboxylic Acid Amines) Dimethomorph
	Group 12 (Phenylpyrroles) Fludioxonil
	M3 (Dithiocarbamate) Mancozeb Maneb Thiram
	M1/2 (Inorganics) Copper Sulfur
UNKNOWN	Microbial membrane disruptors

*This is not an exhaustive list, but captures the majority of active ingredients that are relevant in Canada.
Source: www.frac.info
Reproduced with permission.

Resistance MANAGEMENT: Combined Fungicide Resistance Risk Agronomic Practices

- // Climatic conditions favouring disease?
- // Resistant cultivars available?
- // How many fungicide applications per year?
- // Irrigation potential?
- // How many fungicide applications are targeted on the same pathogen year after year?
- // Sanitary measures (i.e., tillage)?
- // Fertilization considerations?
- // What rates are used (lethal versus sub-lethal)?

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.



MIX IT UP

Brought to you by 

IF THERE'S RESISTANCE
IN YOUR FIELD, YOU'LL
FEEL IT IN YOUR YIELD.

TIME TO TANK MIX.

FOR MORE INFORMATION
VISIT MIXITUP.CA



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES

tank mixes

BUCTRIL M

TANK MIXES	REGISTERED OR SUPPORTED	TANK MIX ORDER	CROPS	NOTES
Ally®	Registered	Ally® > Buctril M > NIS	Barley and Wheat	Used for hemp-nettle and chickweed as well as labelled weeds.
Axial®	Registered	Buctril M > Axial® BIA	Spring barley and Spring wheat	Adigor® at 283 mL/ac. Do not apply by aerial application. Only apply this mix to wheat that is not underseeded to legumes.
Centurion®/Select®	Registered	Buctril M > Centurion® > Amigo®	Flax	Cannot be applied by air.
Everest®	Registered	Everest® > Buctril M > NIS	Spring wheat	Non-ionic at 0.25% v/v. Do not apply by aerial application.
Horizon® NG	Registered	Buctril M > Horizon® NG	Wheat	For control of Persian darnel, increase Horizon® rate to 117 mL/ac. and Score® to 1% v/v.
Liquid Achieve®	Registered	Achieve® > Buctril M > Turbocharge®	Durum and Spring wheat	Do not apply by air. Add Turbocharge® at 0.5% v/v.
Luxxur	Bayer supported tank mix	Luxxur A > AMS (0.5 L/ac. in Wheat) > Luxxur B > Buctril M > NIS (0.25% v/v in Durum)	Durum, Spring and Winter wheat	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.
MCPA	Registered	Buctril M > MCPA	Barley, Oats and Wheat	Can add an additional 275 g ai MCPA per hectare.
MCPA Ester	Registered	Buctril M > MCPA	Barley, Oats and Wheat	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.
Poast®	Registered	Buctril M > Poast®	Flax	Do not use on low linolenic varieties. Do not spray when flax is under stress.
Puma Advance	Registered	Buctril M > Puma Advance	Barley and Wheat	
Refine® SG	Registered	Refine® > Buctril M > NIS	Barley and Wheat	Usually used when targeting chickweed, hemp-nettle and redroot pigweed.
Refine® SG + Puma Advance	Registered	Refine® > Buctril M > Puma Advance	Barley and Wheat	
Select®	Registered	Buctril M > Select® > Merge®	Flax	Cannot be applied by air, otherwise crop damage or poor control may result.
Sevin® XLR Plus	Bayer supported tank mix	Sevin® XLR Plus > Buctril M	Barley, Oats, Wheat (Durum, Spring and Winter)	
Stratego PRO (ON, QC, NB, NS, NFD, PEI)	Supported	Stratego PRO > Buctril M	Winter wheat	High water volumes decrease potential injury; especially important in cool temperatures.
Tilt®	Bayer supported tank mix	Tilt® > Buctril M	Barley, Oats, Wheat (Durum, Spring and Winter)	
Traxos®	Bayer supported tank mix	Buctril M > Traxos®	Durum and Spring wheat	
Varro	Registered	Varro > Buctril M	Wheat	

CONVERGE XT (CONVERGE 480 AND CONVERGE FLEXX)

TANK MIXES	REGISTERED OR SUPPORTED	TANK MIX ORDER	CROPS	NOTES
Atrazine	Registered	Converge 480 > Converge Flexx	Corn	
Converge Flexx + XtendiMax (dicamba) + Roundup	Supported	Converge Flexx > XtendiMax > Roundup	Corn	Use pre-emerge on corn.
Roundup	Registered	Converge 480 > Converge Flexx > Roundup	Corn	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.
Roundup Xtend	Supported	Converge 480 > Converge Flexx > Roundup Xtend	Corn	Use pre-emerge on corn.
XtendiMax (dicamba)	Supported	Converge 480 > Converge Flexx > XtendiMax	Corn	Use pre-emerge on corn.
XtendiMax (dicamba) + Roundup	Supported	Converge 480 > Converge Flexx > XtendiMax > Roundup	Corn	Use pre-emerge on corn.

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



tank mixes

DECIS

TANK MIXES	REGISTERED OR SUPPORTED	TANK MIX ORDER	CROPS	NOTES
2,4-D	Registered	Decis > 2,4-D	Barley, Corn, Oats, Pasture and Wheat	
Banvel®	Registered	Banvel® > Decis	Barley, Corn, Oats, Pasture and Wheat	
Buctril M	Registered	Decis > Buctril M	Barley, Flax, Oats and Wheat	
Centurion®	Bayer supported tank mix	Decis > Centurion® > Amigo® (0.5% v/v)	All crops that both products are registered on	
Centurion® + Liberty®	Bayer supported tank mix	Amigo® (0.5% v/v) > Liberty® > Centurion® > Decis	LibertyLink® trait canola	
Delaro	Bayer supported tank mix	Delaro > Decis	Lentils	
Headline®	Bayer supported tank mix	Headline® > Decis	All crops that both products are registered on	
Lance®	Bayer supported tank mix	Lance® > Decis	Alfalfa (seed production only), Canola and Lentils	
Liberty®	Bayer supported tank mix	Liberty® > Decis	LibertyLink® trait canola	
MCPA Ester	Registered	Decis > MCPA	Barley, Corn, Flax, Oats, Pasture and Wheat	
Odyssey®	Bayer supported tank mix	Odyssey® > Decis > Merge®	Clearfield® Canola, Clearfield® Xceed B, Juncea Canola, Clearfield® Lentils	Merge® must be used with Odyssey® at a rate of 0.5 L/100 L of spray solution.

INFINITY

TANK MIXES	REGISTERED OR SUPPORTED	TANK MIX ORDER	CROPS	NOTES
2,4-D Ester	Bayer supported tank mix	Infinity > 2,4-D Ester	Barley, Durum, Spring and Winter wheat	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.
2,4-D Ester + AMS	Registered for control of stork's-bill	AMS > Infinity > 2,4-D Ester	Barley, Durum, Spring and Winter wheat	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.
Axial®	Registered	Infinity > Axial®	Barley and Spring wheat	Apply when the annual grass weeds are at the 1 to 6 leaf, prior to 4th tiller, stage of growth.
Axial® + Tilt®	Bayer supported tank mix	Tilt® > Infinity > Axial® > Adigor®	Barley and Spring wheat	Temporary crop injury may be observed when AMS is included for enhanced broadleaf weed control.
Decis	Bayer supported tank mix	Decis > Infinity	Barley, Durum and Spring wheat	
Horizon® NG	Registered	AMS > Infinity > Horizon® NG	Durum and Spring wheat	
Liquid Achieve®	Registered	AMS > Achieve® > Infinity > Turbocharge®	Barley, Durum, Spring and Winter wheat	
Lontrel®	Bayer supported tank mix	Infinity > Lontrel®	Barley, Durum and Spring wheat	
Luxxur	Bayer supported tank mix	Luxxur A > AMS (0.5 L/ac. in Wheat) > Luxxur B > Infinity > NIS (0.25% v/v in Durum wheat)	Durum, Spring and Winter wheat	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.
MCPA Ester	Bayer supported tank mix	Infinity > MCPA Ester	Barley, Durum, Spring and Winter wheat	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.
Puma Advance	Registered	AMS > Infinity > Puma Advance	Barley, Durum and Spring wheat	
Puma Advance + Tilt®	Bayer supported tank mix	Tilt® > Infinity > Puma Advance	Barley and Spring wheat	Temporary crop injury may be observed when AMS adjuvant is included for enhanced weed control.
Sevin® XLR Plus	Bayer supported tank mix	Sevin® XLR Plus > Infinity	Barley, Durum and Spring wheat	
Stratego PRO (ON, QC, NB, NS, NFD, PEI)	Bayer supported tank mix	Stratego PRO > Infinity	Winter wheat	High water volumes decrease potential injury; especially important in cool temperatures. Do not tank mix in durum wheat.
Traxos®	Bayer supported tank mix	Infinity > Traxos®	Durum and Spring wheat	
Traxos® + Tilt®	Bayer supported tank mix	Tilt® > Infinity > Traxos®	Durum and Spring wheat	
Varro	Registered	Varro > Infinity	Durum, Spring and Winter wheat	

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



INFINITY FX

TANK MIXES	REGISTERED OR SUPPORTED	TANK MIX ORDER	CROPS	NOTES
2,4-D Ester	Bayer supported tank mix	FX Herbicide > Infinity > 2,4-D Ester	Barley, Durum and Spring wheat	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.
2,4-D Ester + AMS	Registered for control of stork's-bill	AMS > FX Herbicide > Infinity > 2,4-D Ester	Barley, Durum and Spring wheat	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.
Axial® BIA	Registered	FX Herbicide > Infinity > Axial® BIA	Barley and Spring wheat	Apply when the annual grass weeds are at the 1 to 6 leaf, prior to 4th tiller, stage of growth.
Decis	Bayer supported tank mix	Decis > FX Herbicide > Infinity	Barley, Durum and Spring wheat	
Horizon® NG	Bayer supported tank mix	FX Herbicide > Infinity > Horizon® NG	Durum and Spring wheat	
Liquid Achieve®	Registered	Achieve® > FX Herbicide > Infinity > Turbocharge®	Barley, Durum and Spring wheat	
Lontrel®	Bayer supported tank mix	FX Herbicide > Infinity > Lontrel®	Barley, Durum and Spring wheat	
Luxxur	Bayer supported tank mix	Luxxur A > AMS (0.5 L/ac. in Wheat) > Luxxur B > Infinity > FX Herbicide > NIS (0.25% v/v in Durum wheat)	Durum, Spring and Winter wheat	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.
MCPA Ester	Bayer supported tank mix	FX Herbicide > Infinity > MCPA Ester	Barley, Durum and Spring wheat	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.
Puma Advance	Registered	FX Herbicide > Infinity > Puma Advance	Barley, Durum and Spring wheat	
Sevin® XLR Plus	Bayer supported tank mix	Sevin® XLR Plus > FX Herbicide > Infinity	Barley, Durum and Spring wheat	
Tilt®	Bayer supported tank mix	Tilt® > FX Herbicide > Infinity	Barley, Durum, and Spring wheat	
Traxos®	Bayer supported tank mix	FX Herbicide > Infinity > Traxos®	Durum and Spring wheat	
Varro	Registered	AMS > Varro > FX Herbicide > Infinity	Durum and Spring wheat	
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

TANK MIXES	REGISTERED OR SUPPORTED	TANK MIX ORDER	CROPS	NOTES
Unless otherwise noted for all Luxxur tank mixes, add AMS (spring wheat) or NIS (durum wheat) for enhanced grass control.				
2,4-D Ester	Bayer supported tank mix	Luxxur A > AMS (0.5 L/ac. in Wheat) > Luxxur B > 2,4-D > NIS (0.25% v/v in Durum)	Durum, Spring and Winter wheat	2,4-D for improved stork's-bill control. Minimum of 4 leaf crop stage.
Buctril M	Bayer supported tank mix	Luxxur A > AMS (0.5 L/ac. in Wheat) > Luxxur B > Buctril M > NIS (0.25% v/v in Durum)	Durum, Spring and Winter wheat	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.
Curtail™ M	Bayer supported tank mix	Luxxur A > AMS (0.5 L/ac.) > Luxxur B > Curtail™ M > NIS (0.25% v/v in Durum)	Durum and Spring wheat	
Frontline™ XL	Bayer supported tank mix	Luxxur A > AMS (0.5 L/ac.) > Frontline™ XL > Luxxur B > NIS (0.25% v/v in Durum)	Durum and Spring wheat	
Infinity	Bayer supported tank mix	Luxxur A > AMS (0.5 L/ac. in Wheat) > Luxxur B > Infinity > NIS (0.25% v/v in Durum)	Durum, Spring and Winter wheat	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.
Infinity FX	Bayer supported tank mix	Luxxur A > AMS (0.5 L/ac. in Wheat) > Luxxur B > Infinity > FX Herbicide > NIS (0.25% v/v in Durum)	Durum, Spring and Winter wheat	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.
MCPA Ester	Bayer supported tank mix	Luxxur A > AMS (0.5 L/ac. in Wheat) > Luxxur B > MCPA > NIS (0.25% v/v in Durum)	Durum, Spring and Winter wheat	
OcTTain™	Bayer supported tank mix	Luxxur A > AMS (0.5 L/ac. in Wheat) > Luxxur B > OcTTain™ > NIS (0.25% v/v in Durum)	Durum, Spring and Winter wheat	Minimum of 4 leaf crop stage as per OcTTain™ label.
Paradigm™	Bayer supported tank mix	Paradigm™ > Luxxur A > AMS (0.5 L/ac. in Wheat) > Luxxur B > NIS (0.25% v/v in Durum)	Durum, Spring and Winter wheat	
Pixxaro™	Bayer supported tank mix	Luxxur A > AMS (0.5 L/ac. in Wheat) > Luxxur B > Pixxaro™ > Pixxaro™ B	Durum, Spring and Winter wheat	When Luxxur is tank mixed with Pixxaro™, NIS is not required for broadleaf control.
Prestige™	Bayer supported tank mix	Luxxur A > AMS (0.5 L/ac.) > Luxxur B > Prestige™ > NIS (0.25% v/v in Durum)	Durum and Spring wheat	
Stellar™	Bayer supported tank mix	Luxxur A > AMS (0.5 L/ac.) > Luxxur B > Stellar™ > NIS (0.25% v/v in Durum)	Durum and Spring wheat	
Thumper	Bayer supported tank mix	Luxxur A > AMS (0.5 L/ac. in Wheat) > Luxxur B > Thumper > NIS (0.25% v/v in Durum)	Durum, Spring and Winter wheat	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.
Trophy®	Bayer supported tank mix	Luxxur A > AMS (0.5 L/ac. in Wheat) > Luxxur B > Trophy® A > Trophy® B > NIS (0.25% v/v in Durum)	Durum, Spring and Winter wheat	

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



OLYMPUS

TANK MIXES	REGISTERED OR SUPPORTED	TANK MIX ORDER	CROPS	NOTES
2,4-D Ester® + Roundup	Registered	Olympus > 2,4-D Ester® > Roundup	Wheat	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.
AIM® + Roundup	Registered	Olympus > AIM® > Roundup	Wheat	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.
Avadex® Liquid EC	Registered	Olympus > Avadex®	Wheat	Do not apply this product before seeding wheat in soils with 4% or less organic matter (brown, dark brown or grey wooded soils) where discers 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.
BlackHawk® (with carfentrazone) + Roundup	Registered	Olympus > Blackhawk® > Roundup	Wheat	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.
BlackHawk® (with pyraflufen) + Roundup	Registered	Olympus > Blackhawk® > Roundup	Wheat	For minimum or zero till operations only. Pre-seed or a maximum of 3 days after seeding.
Buctril M + Roundup	Registered	Olympus > Buctril M > Roundup	Wheat	For minimum or zero till operations only.
CleanStart®	Registered	Olympus > CleanStart®	Wheat	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.
Glykamba®	Registered	Olympus > Glykamba®	Wheat	
Goldwing® + Roundup	Registered	Olympus > Goldwing® > Roundup	Wheat	For minimum or zero till operations only.
Heat® LQ + Roundup	Registered	Olympus > Heat® LQ > Roundup	Wheat	
MCPA Ester + Roundup	Registered	Olympus > MCPA Ester > Roundup	Wheat	
Pardner + Roundup	Registered	Olympus > Pardner > Roundup	Wheat	For minimum or zero till operations only.
Roundup	Registered	Olympus > Roundup	Wheat	
XtendiMax (dicamba) + Roundup	Registered	Olympus > XtendiMax > Roundup	Wheat	For minimum or zero till operations only. Banvel® II is no longer manufactured, but product still remains in the distribution system.

OPTION LIQUID

TANK MIXES	REGISTERED OR SUPPORTED	TANK MIX ORDER	CROPS	NOTES
Atrazine + UAN	Registered	Option > Atrazine > UAN	Corn	Possible antagonism affecting yellow foxtail activity.
Distinct® + UAN	Registered	Distinct® > Option > UAN	Corn	
Roundup	Supported	Option > Roundup	Corn	Roundup-tolerant (glyphosate) corn only.
UAN	Registered	Option > UAN	Corn	If used alone, must be used with UAN.
XtendiMax (dicamba) + UAN	Registered	Option > XtendiMax > UAN	Corn	Can be applied up to the 8 leaf stage of corn.

PARDNER

TANK MIXES	REGISTERED OR SUPPORTED	TANK MIX ORDER	CROPS	NOTES
2,4-D Ester	Registered	2,4-D Ester > Pardner	Barley and Wheat	
Accent® + NIS	Registered	Accent® > Pardner > NIS	Field corn	
Banvel®	Registered	Banvel® > Pardner	Field corn	
Horizon® NG	Registered	Horizon® NG > Pardner	Wheat	
Liquid Achieve®	Registered	Achieve® > Pardner	Barley and Wheat	
MCPA Ester	Registered	MCPA Ester > Pardner	Barley, Canary seed, Fall rye, Flax, Oats, Seedling grasses and Wheat	
Sevin® XLR Plus	Bayer supported tank mix	Sevin® XLR Plus > Pardner	All crops that both products are registered on	

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

tank mixes

PUMA ADVANCE

TANK MIXES	REGISTERED OR SUPPORTED	TANK MIX ORDER	CROPS	NOTES
2,4-D Ester	Registered	2,4-D Ester > Puma Advance	Barley and Wheat	
Ally®	Registered	Ally® > Puma Advance	Wheat	
Attain™ XC	Registered	Attain™ XC > Puma Advance	Wheat	
Barricade®	Bayer supported tank mix	Barricade® > Puma Advance	Barley, Durum, Spring and Winter wheat	
Buctril M	Registered	Buctril M > Puma Advance	Barley and Wheat	
Curtail™ M	Registered	Curtail™ M > Puma Advance	Barley and Wheat	
Decis	Bayer supported tank mix	Decis > Puma Advance	Barley and Wheat	
Dichlorprop-D	Registered	Dichlorprop-D > Puma Advance	Barley and Wheat	
Dyvel®	Registered	Dyvel® > Puma Advance	Barley and Wheat	
Dyvel® DS	Registered	Dyvel® DS > Puma Advance	Wheat	
Estaprop®	Registered	Estaprop® > Puma Advance	Barley and Wheat	
Express Pack®	Registered	Express Pack® > Puma Advance	Barley and Wheat	Registered for foxtail only. Will not perform on wild oats.
Frontline™	Registered	Frontline™ > Puma Advance	Barley and Wheat	Registered for foxtail only. Will not perform on wild oats.
Grow TTF®	Bayer supported tank mix	Grow TTF® > Puma Advance	Barley, Durum and Spring wheat	
Infinity	Registered	Infinity > Puma Advance	Barley and Wheat	
Infinity FX	Registered	FX Herbicide > Infinity > Puma Advance	Barley, Durum and Spring wheat	
Lontrel® 360	Registered	Lontrel® 360 > Puma Advance	Wheat	
MCPA Amine	Registered	MCPA Amine > Puma Advance	Barley and Wheat	
MCPA Ester	Registered	MCPA Ester > Puma Advance	Barley and Wheat	
Mecoprop	Registered	Mecoprop > Puma Advance	Wheat	
Momentum®	Bayer supported tank mix	Momentum® > Puma Advance	Barley, Durum and Spring wheat	
OcTTain™	Bayer supported tank mix	OcTTain™ > Puma Advance	Durum and Spring wheat	Minimum of 4 leaf crop stage as per OcTTain™ label.
Pixxaro™	Bayer supported tank mix	Pixxaro™ > Puma Advance	Barley, Durum and Spring wheat	
Prestige™	Registered	Prestige™ > Puma Advance	Barley and Wheat	
Prestige™ XC	Registered	Prestige™ XC > Puma Advance	Barley and Wheat	
Refine® SG	Registered	Refine® SG > Puma Advance	Barley and Wheat	
Sevin® XLR Plus	Bayer supported tank mix	Sevin® XLR Plus > Puma Advance	Barley, Durum and Spring wheat	
Spectrum™	Registered	Spectrum™ > Puma Advance	Barley and Wheat	Registered for foxtail only. Will not perform on wild oats.
Thumper	Registered	Thumper > Puma Advance	Barley and Wheat	
Tilt®	Bayer supported tank mix	Tilt® > Puma Advance	Barley, Durum and Spring wheat	
Triton® C	Registered	Triton® C > Puma Advance	Barley and Wheat	
Trophy®	Registered	Trophy® > Puma Advance	Barley and Wheat	
Turboprop® 600	Registered	Turboprop® 600 > Puma Advance	Barley and Wheat	
Unity®	Registered	Unity® > Puma Advance	Barley and Wheat	

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



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES

SENCOR (DF)

TANK MIXES	REGISTERED OR SUPPORTED	TANK MIX ORDER	CROPS	NOTES
Dual Magnum® II	Registered	Sencor DF > Dual Magnum® II	Soybeans	
Eragon® + Merge®	Supported	Sencor DF > Eragon® > Merge®	Soybeans	
Frontier®	Registered	Sencor DF > Frontier®	Soybeans	
Lorox®	Registered	Sencor DF > Lorox®	Soybeans	
Pursuit®	Registered	Sencor DF > Pursuit®	Soybeans	
Roundup	Registered	Sencor DF > Roundup	Soybeans	Roundup-tolerant (glyphosate) soybeans only.
Roundup Xtend	Registered	Sencor Df > Roundup Xtend	Soybeans	Roundup Ready 2 Xtend soybeans only.
Treflan®	Registered	Sencor DF > Treflan® EC	Soybeans	
XtendiMax (dicamba) + Roundup	Registered	Sencor DF > XtendiMax > Roundup	Soybeans	Roundup Ready 2 Xtend soybeans only.

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

tank mixes

THUMPER

TANK MIXES	REGISTERED OR SUPPORTED	TANK MIX ORDER	CROPS	NOTES
2,4-D Ester	Bayer supported tank mix	Thumper > 2,4-D	Barley, Durum and Spring wheat	Add 2,4-D Ester at 140 g ai/ha (2 active oz./ac.) for enhanced broadleaf control. 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.
Decis	Bayer supported tank mix	Decis > Thumper	Barley, Durum and Spring wheat	
Horizon® NG	Registered	Thumper > Horizon® NG	Durum and Spring wheat	Used for Persian darnel.
Liquid Achieve®	Registered	Achieve® > Thumper > Turbocharge®	Barley, Durum and Spring wheat	
Luxxur	Bayer supported tank mix	Luxxur A > AMS (0.5 L/ac. in Wheat) > Luxxur B > Thumper > NIS (0.25% v/v in Durum wheat)	Durum, Spring and Winter wheat	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.
Puma Advance	Registered	Thumper > Puma Advance	Barley and Wheat	
Sevin® XLR Plus	Bayer supported tank mix	Sevin® XLR Plus > Thumper	Barley, Durum and Spring wheat	
Tilt®	Bayer supported tank mix	Tilt® > Thumper	Barley, Durum and Spring wheat	
Varro	Registered	Varro > Thumper	Durum, Spring and Winter wheat	

TUNDRA

TANK MIXES	REGISTERED OR SUPPORTED	TANK MIX ORDER	CROPS	NOTES
2,4-D Ester	Bayer supported tank mix	Tundra > 2,4-D Ester	Barley, Durum and Spring wheat	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.
2,4-D Ester + AMS	Registered	AMS > Tundra > 2,4-D Ester	Barley, Durum and Spring wheat	
Decis	Bayer supported tank mix	Decis > Tundra	Barley, Durum and Spring wheat	
Lontrel®	Bayer supported tank mix	Lontrel® > Tundra	Barley, Durum and Spring wheat	
MCPA Ester	Bayer supported tank mix	Tundra > MCPA Ester	Barley, Durum and Spring wheat	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.
Sevin® XLR Plus	Bayer supported tank mix	Sevin® XLR Plus > Tundra	Barley, Durum and Spring wheat	
Tilt®	Bayer supported tank mix	Tilt® > Tundra	Barley and Spring wheat	Temporary crop injury may be observed when AMS adjuvant is included for enhanced weed control.

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



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES

VARRO

TANK MIXES	REGISTERED OR SUPPORTED	TANK MIX ORDER	CROPS	NOTES
Unless otherwise noted for all Varro tank mixes, add AMS (spring wheat) or NIS (durum wheat) for enhanced grass control.				
2,4-D Ester	Registered	AMS (0.5 L/ac. in Wheat) > Varro > 2,4-D > NIS (0.25% v/v in Durum)	Durum and Spring wheat	2,4-D for improved stork's-bill control.
Attain™ XC	Registered	Varro > Attain™ XC	Spring wheat	
Attain™ XC	Bayer supported tank mix	Varro > Attain™ XC	Durum wheat	
Barricade®/ Barricade® II	Bayer supported tank mix	Barricade® > Varro	Durum and Spring wheat	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.
Barricade® M	Bayer supported tank mix	Barricade® M > Varro	Durum and Spring wheat	Add AMS (spring wheat) or NIS (durum wheat) for enhanced grass control.
Buctril M	Registered	Varro > Buctril M	Durum and Spring wheat	
Buctril M	Bayer supported tank mix	Varro > Buctril M	Winter wheat	
Curtail™ M	Registered	AMS > Varro > Curtail™ M	Spring wheat	In spring wheat add AMS adjuvant when tank mixing with Momentum™ herbicide. Use NIS adjuvant in durum wheat.
Frontline™ XL	Registered	Varro > Frontline™ XL	Spring wheat	
Grow TTF®	Bayer supported tank mix	Grow TTF® > Varro	Durum and Spring wheat	
Infinity	Registered	Varro > Infinity	Durum, Spring and Winter wheat	
Infinity FX	Registered	AMS > Varro > FX Herbicide > Infinity	Durum, Spring and Winter wheat	
MCPA Ester	Registered	AMS (0.5 L/ac. in Wheat) > Varro > MCPA > NIS (0.25% v/v in Durum)	Durum and Spring wheat	
Momentum®	Bayer supported tank mix	AMS > Varro > Momentum® > NIS (in Durum wheat)	Durum and Spring wheat	In spring wheat add AMS adjuvant when tank mixing with Momentum™ herbicide. Use NIS adjuvant in durum wheat.
OcTTain™	Bayer supported tank mix	Varro > OcTTain™	Durum and Spring wheat	Minimum of 4 leaf crop stage as per OcTTain™ label.
Paradigm™	Bayer supported tank mix	AMS > Paradigm™ > Varro	Durum, Spring and Winter wheat	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.
Pixxaro™	Bayer supported tank mix	AMS > Varro > Pixxaro™ > Pixxaro™ B	Durum, Spring and Winter wheat	When Varro is tank mixed with Pixxaro™, NIS is not required for broadleaf control.
PP-23235	Bayer supported tank mix	PP-23235 > Varro	Durum and Spring wheat	Add MCPA Ester at 280 g ai/ha (4 active oz/ac.) if required.
PP-2525	Bayer supported tank mix	PP-2525 > Varro	Durum and Spring wheat	Add MCPA Ester at 280 g ai/ha (4 active oz/ac.) if required.
PP-31155	Bayer supported tank mix	PP-31155 > Varro	Durum and Spring wheat	Add MCPA Ester at 280 g ai/ha (4 active oz/ac.) if required.
Prestige™	Bayer supported tank mix	AMS > Varro > Prestige™ > NIS (in Durum wheat)	Durum and Spring wheat	In spring wheat add AMS adjuvant when tank mixing with Prestige™ herbicide. Use NIS adjuvant in durum wheat.
Refine® M/Broadside®	Bayer supported tank mix	Refine® > Varro	Durum and Spring wheat	
Refine® SG	Registered	Refine® > Varro	Spring wheat	
Refine® SG + 2,4-D Ester	Registered	Refine® > Varro > 2,4-D	Spring wheat	
Refine® SG + MCPA Ester	Registered	Refine® > Varro > MCPA	Spring wheat	Improved Canada thistle control.
Retain® SG	Bayer supported tank mix	Varro > Retain®	Durum and Spring wheat	
Stellar™	Bayer supported tank mix	Varro > Stellar™	Durum and Spring wheat	
Thumper	Registered	Varro > Thumper	Durum, Spring and Winter wheat	
Tilt®	Bayer supported tank mix	Varro > Tilt®	Spring and Winter wheat	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.
Travallas®	Bayer supported tank mix	Travallas® > Varro	Durum and Spring wheat	

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

tank mixes

VELOCITY M3

TANK MIXES	REGISTERED OR SUPPORTED	TANK MIX ORDER	CROPS	NOTES
2,4-D Ester	Bayer supported tank mix	Velocity m3 > 2,4-D Ester	Durum, Spring and Winter wheat	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.
2,4-D Ester + AMS	Registered	AMS > Velocity m3 > 2,4-D Ester	Spring wheat	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.
Decis	Bayer supported tank mix	Velocity m3 > Decis	Durum and Spring wheat	
Lontrel™	Bayer supported tank mix	Lontrel™ > Velocity m3	Durum and Spring wheat	
MCPA Ester	Bayer supported tank mix	Velocity m3 > MCPA Ester	Durum, Spring and Winter wheat	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.
Sevin® XLR Plus	Bayer supported tank mix	Sevin® XLR Plus > Velocity m3	Durum and Spring wheat	
Tilt®	Bayer supported tank mix	Tilt® > Velocity m3	Spring and Winter wheat	Temporary crop injury may be observed when AMS adjuvant is included for enhanced weed control.

VIOS G3

TANK MIXES	REGISTERED OR SUPPORTED	TANK MIX ORDER	CROPS	NOTES
Atrazine + Roundup	Supported	Atrazine > Vios > Roundup	Corn	Roundup-tolerant (glyphosate) corn only.
Liberty®	Registered	Vios > Liberty®	Corn	Liberty® tolerant corn only.
Roundup	Registered	Vios > Roundup	Corn	Roundup-tolerant (glyphosate) corn only.
XtendiMax + Roundup	Supported	Vios > XtendiMax > Roundup	Corn	Only use up to the 5 leaf stage of corn.

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.

OVERNIGHT TEMPERATURE	GUIDELINES
-1°C to -3°C (after a frost)	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.
0°C	Wait for at least 48 to 72 hours of good growing weather before applying herbicides.
+1°C	Wait for at least 24 to 48 hours of good growing weather before applying herbicides.
+2°C	Wait for at least 24 hours of good growing weather before applying herbicides.
+3°C	Wait until temperatures warm up to at least +15°C that day before applying herbicides.
+4°C	Spray herbicides early that morning.

Note: Please consult product labels for specific temperature related usage instructions.



Wettable powders,
flowable products



Agitate



Microcapsule
suspension



Liquids and solubles



Emulsifiable
concentrates



High-load
glyphosates



Surfactants

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.



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES



ROUNDUP

CANOLA

CEREALS

CORN

PULSES

SOYBEANS

RESOURCES

crops.science.bayer.ca

1 888-283-6847



@Bayer4CropsCA

#AskBayerCrop

Bayer is a member of Excellence Through Stewardship® (ETS). Bayer products are commercialized in accordance with ETS Product Launch Stewardship Guidance, and in compliance with Bayer's Policy for Commercialization of Biotechnology-Derived Plant Products in Commodity Crops. Trecepta® RIB Complete® Corn has been approved for import into Australia/New Zealand, Colombia, China, Japan, South Korea, Mexico, Taiwan, United States and all individual biotech traits approved for import into the European Union. Please check biotradestatus.com for trait approvals in other geographies. Any other Bayer commercial biotech products mentioned here have been approved for import into key export markets with functioning regulatory systems. Any crop or material produced from these products can only be exported to, or used, processed or sold in countries where all necessary regulatory approvals have been granted. It is a violation of national and international law to move material containing biotech traits across boundaries into nations where import is not permitted. Growers should talk to their grain handler or product purchaser to confirm their buying position for these products. Excellence Through Stewardship® is a registered trademark of Excellence Through Stewardship.

Roundup Ready® Technology contains genes that confer tolerance to glyphosate. Roundup Ready 2 Xtend® soybeans contains genes that confer tolerance to glyphosate and dicamba. LibertyLink® Technology contains genes that confer tolerance to glufosinate. **Glyphosate** will kill crops that are not tolerant to glyphosate. **Dicamba** will kill crops that are not tolerant to dicamba. **Glufosinate** will kill crops that are not tolerant to glufosinate. Contact your local crop protection dealer or call the technical support line at 1-888-283-6847 for recommended Roundup Ready® Xtend Crop System weed control programs. Insect control technology provided by **Vip3A** is utilized under license from Syngenta Crop Protection AG. Agrisure Viptera® is a registered trademark of a Syngenta group company. LibertyLink® is a registered trademark of BASF. LibertyLink® and the Water Droplet Design are trademarks of BASF. Used under license. Herculex® is a registered trademark of Dow AgroSciences LLC. Used under license.

Services and products offered by The Climate Corporation are subject to the customer agreeing to our Terms of Service. Our services provide estimates or recommendations based on models. These do not guarantee results. Consult with your agronomist, commodity broker, or other industry professional before making financial, farming, or risk management decisions. More information at <https://climatefieldview.ca/legal/disclaimer>. FieldView™ is a trademark of The Climate Corporation, Bayer CropScience Inc. licensee.

ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. Bayer®, Bayer Cross, BayerValue™, Acceleron®, Allegiance®, BioRise®, Buctril® M, BUTEO™, Concept®, Converge®, Decis®, Delaro®, Ethrel®, EverGol®, Follicur®, Infinity®, Infinity® FX, Luxxur®, Mix It Up™, Olympus®, Option®, Pardner®, Proline®, Propulse®, Prosaro®, Prosper®, Puma®, Raxil®, RIB Complete®, RiskShield®, Roundup®, Roundup Ready 2 Technology and Design™, Roundup Ready 2 Xtend®, Roundup Ready 2 Yield®, Roundup Ready®, Roundup Transorb®, Roundup WeatherMAX®, Roundup Xtend®, SeedGrowth®, Sencor®, SmartStax®, Stratego®, Stress Shield®, Thumper®, TiMOR™, Transorb®, Trecepta®, Trilex®, TruFlex™, Tundra®, VaporGrip®, Varro®, Velocity, Vios®, VT Double PRO®, XtendFlex® and XtendiMax® are the trademarks of the Bayer Group or its licensors.

DuPont™, Lumiderm® are trademarks of E.I. du Pont de Nemours and Company. JumpStart® is a registered trademark of Novozymes. Used under license. All other trademarks are the trademarks of their respective companies.

Bayer CropScience Inc. is a member of CropLife Canada. ©2021 Bayer Group. All rights reserved.