



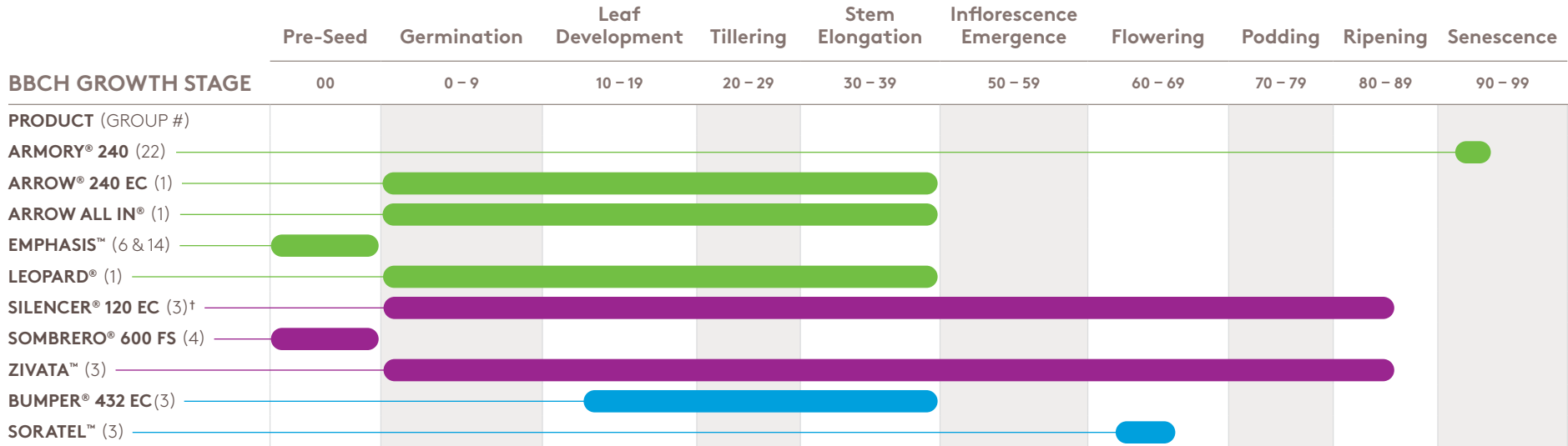
WE ARE

All In  
on canola



ADAMA

# CANOLA GROWTH STAGES



Timing based on using the product alone. Please refer to tank-mix partners label for crop timing.

† Dependent on PHI (7 days)

# DECISION MATRIXES

## CANOLA

### PRE-SEED BROAD SPECTRUM WEED CONTROL

#### Carfentrazone-ethyl & Bromoxynil Group 6 & 14

- Non residual
- Two modes of action, when mixed with glyphosate third mode is added to fight Group 2, 9 resistant weeds
- Fast knockdown
- For best results spray in the heat of the day with adequate water to ensure adequate coverage
- Can be applied immediately before seeding canola
- Effective against volunteer canola, kochia and cleavers



**EMPHASIS™**

### IN CROP GRASSY WEED CONTROL 1 LEAF – BUD EMERGENCE

#### Clethodim Group 1

- Grassy annual weed control (Wild oats, Volunteer barley, Volunteer wheat)
- Ideal tank-mix partner with glufosinate for LL Canola
- Ground application only



**ARROW® 240 EC**

#### Clethodim Group 1

- Grassy annual weed control (Wild oats, volunteer barley, volunteer wheat)
- Ideal tank-mix partner with glufosinate for glufosinate resistant Canola
- Surfactant comes pre-mixed: simplifies spraying; convenient; saves time
- Ground application only



**ARROW ALL IN®**

#### Quizalofop-P-ethyl Group 1

- Controls hard to kill winter annual and perennial grasses (Japanese or Downy brome, Foxtail barley, Quack grass)
- Can be applied by ground or air



**LEOPARD®**

### DESICCANT

#### Diquat Group 22

- Rapid drydown of plants and weeds when compared to systemic herbicides to provide more precise harvest timing, protecting yield and grade
- Harvest can typically begin within 4–10 days after application
- Best results when applied under cloudy conditions or in the evening
- Ground and air application



**ARMORY® 240**

 FUNGICIDE

GROUP 3

# SORATEL™

Advanced disease protection powered by Asorbital® Formulation Technology. Offering a flexible application window, SORATEL™ is proven to protect a wide variety of crops from disease, including sclerotinia in canola.



POWERED BY

**Asorbital®**

FORMULATION TECHNOLOGY

#### ACTIVE INGREDIENT:

Prothioconazole 250 g/L EC

#### APPLICATION RATES AND ACRES TREATED:

- Rate: 160 – 320 ml/ac; standard rate: 240 ml/ac
- Acres Treated: 60 – 120 ac/case; standard rate: 80 ac/case

#### PACKAGING:

- Case: 2 x 9.6 L jugs

#### HOW IT WORKS:

SORATEL™ is a triazolothione broad-spectrum systemic fungicide with Asorbital® Formulation Technology. Asorbital® Formulation Technology enhances penetration and includes a built-in-adjuvant.

#### KEY DISEASE CONTROLLED IN CANOLA:

Sclerotinia stem rot

#### WATER VOLUME:

- Ground: Minimum 40 L/ac (10 US gal/ac)
- Air: Minimum 20 L/ac (5 US gal/ac)

#### REGISTERED AND SUPPORTED TANK MIXES:

##### Insecticides:

- Coragen®
- Decis®
- SILENCER® 120 EC
- ZIVATA™

#### MIXING INSTRUCTIONS:

1. Add one-half of the required amount of water to the spray or mixing tank and start agitation.
2. Add the required quantity of SORATEL™ to the water and complete filling with water to the required total volume.
3. Maintain agitation throughout mixing and spraying.

#### CROP ROTATIONS:

Treated areas may be replanted with any crop specified on the label as soon as practical after the last application. For crops not listed on the label, do not plant back within 30 days of last application.

#### PRE-HARVEST INTERVAL:

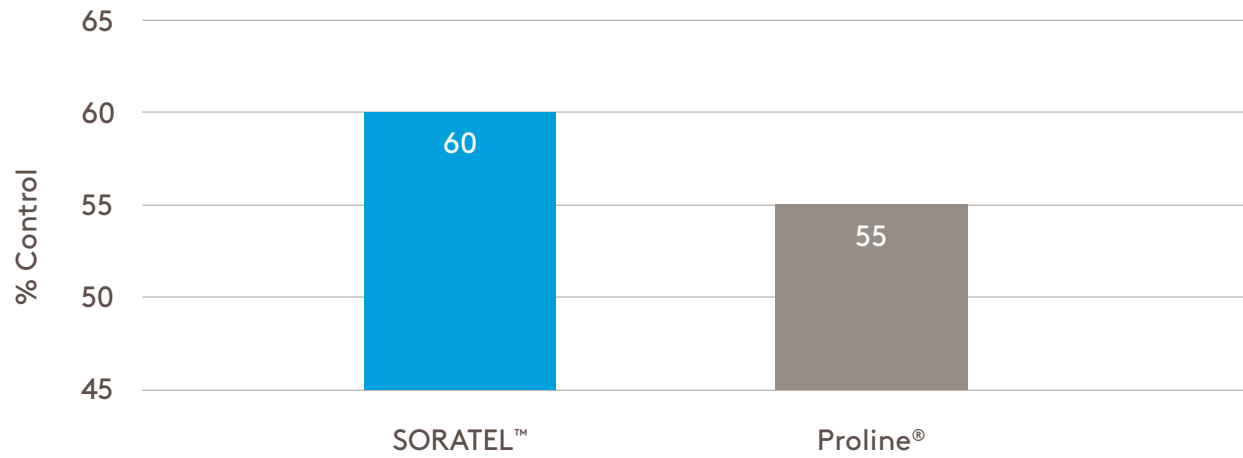
Canola: 36 days

#### STORAGE:

Do not freeze.

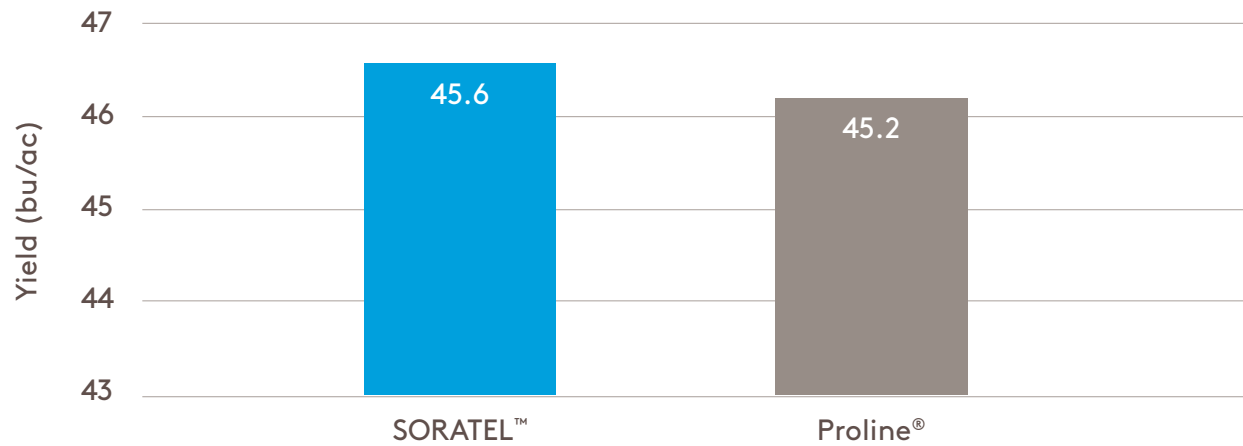
## SCLEROTINIA CONTROL IN CANOLA

Summary of 6 small plot replicated trials conducted by independent researchers in Western Canada.



## SORATEL™ IN CANOLA YIELDS

Summary of 7 farmer applied trials conducted in Western Canada in 2020.



Always read and follow label directions.

# EMPHASIS™

Delivers multiple modes of action and fast burn down control of broadleaf (including Group 2, 4, 5 and 9 resistant biotypes) and grassy weeds (when mixed with glyphosate).



#### ACTIVE INGREDIENTS:

Carfentrazone-ethyl 240 g/L and Bromoxynil 240 g/L

#### APPLICATION RATES AND ACRES TREATED:

- Rate: 15 ml/ac EMPHASIS™ A + 236 ml/ac BROMOTRIL® 240 EC
- Acres Treated: 80 acres treated per case at the low rate of EMPHASIS™

#### PACKAGING:

- Co-pack: 2 x 0.6 L EMPHASIS™ A + 2 x 9.7 L BROMOTRIL® 240 EC

#### REGISTERED CROPS:

- Pre-seed burndown in canola. EMPHASIS™ and BROMOTRIL® 240 EC are non-residual contact herbicides. Application prior to seeding provides comprehensive broadleaf weed control and excellent crop flexibility.

#### HOW IT WORKS:

EMPHASIS™ and BROMOTRIL® 240 EC are contact herbicides which control broadleaf weeds including Group 2 and 9 resistant biotypes such as kochia. Within a few hours following application, the foliage of susceptible weeds shows signs of desiccation, and in subsequent days, necrosis and death of the plant occur.

#### WATER VOLUME:

- Ground: 40 L/ac (10 US gal/ac)
- Do not apply by air.

#### RAIN FASTNESS:

6 hours

Weeds controlled by EMPHASIS™ alone			EMPHASIS™ A Rate	BROMOTRIL® Rate
<b>PRE-PLANT SCENARIO: CANOLA CROPPING SYSTEMS</b>				
80 ac/case			15 ml/ac	236 ml/ac
Black nightshade (up to 5 cm) Eastern black nightshade (up to 5 cm) Lamb's quarters (up to 7.5 cm)	Morning glory (up to 3 leaves) Redroot pigweed Tall waterhemp (up to 5 cm)	Velvetleaf Volunteer canola		
<b>Weeds controlled when tank mixed with glyphosate plus weeds listed above by glyphosate rate*</b>				
Cocklebur Cowcockle Green foxtail Green smartweed	Lady's thumb Smooth pigweed Volunteer barley Volunteer wheat	Wild mustard Wild oats	0.5 REL/ac	
<b>Weeds listed above +</b> Annual bluegrass Annual sow thistle Canada fleabane Cleavers Common ragweed Crabgrass Downy brome	Flixweed Giant foxtail Hempnettle Kochia Narrow-leaved hawk's beard Narrow-leaved vetch Persian darnel	Prickly lettuce Russian thistle Shepherd's purse Stinkweed Volunteer flax Wild buckwheat	0.75 REL/ac	
<b>Weeds listed above +</b> Canada thistle (rosette stage, summerfallow)	Dandelion (less than 15 cm)	Quack grass (light to moderate infestations, 3-4 green leaves or more)	1 REL/ac	

\*See glyphosate label for complete list of weeds controlled at each rate as the EMPHASIS™ + glyphosate combination controls ~70 weeds, not all are listed here



Always read and follow label directions.

# SILENCER® 120 EC

Most trusted active ingredient used in Western Canada to control a wide range of insects.



#### ACTIVE INGREDIENT:

Lambda-cyhalothrin 120 g/L = EC

#### APPLICATION RATES AND ACRES TREATED:

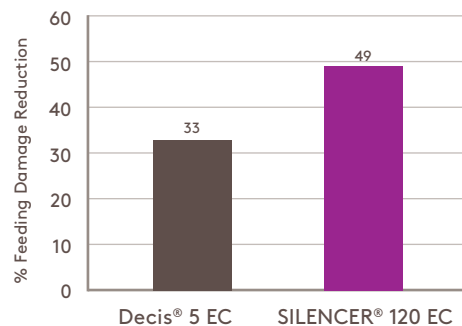
- Rate: 17 – 51 ml/ac; standard rate: 34 ml/ac
- Acres Treated: 74 – 220 ac/jug; standard rate: 110 ac/jug
- Standard rate is applicable for most pests, refer to label for more information.

#### PACKAGING:

- Case: 4 x 3.785 L jug/case

#### SILENCER® 120 EC VS DECIS® 5 EC IN CANOLA:

Average Control in 10 trials in 2019  
(50% average feeding damage in UTC)



- It's important to protect the canola plant in the early stages as this is when the most significant flea beetle damage will occur.
- Canola seedlings can withstand almost 50% of leaf loss, however after 25% plant stand and yield can be drastically reduced.
- SILENCER® 120 EC with the active ingredient lambda-cyhalothrin is one of the best options for control.

#### APPLICATION RATES:

Crops	Canola	
Pest	Crucifer flea beetle, Lygus bug, Cabbage seedpod weevil (adults, Imported cabbageworm, Diamondback moth larvae, Cabbage looper, Bertha armyworm)	Grasshoppers
Rate	34 ml/ac	25 – 34 ml/ac    34 ml/ac
Application Method	Ground or aerial	Ground    Aerial
Application Timing	Apply when the insects are at a vulnerable stage (early larval instars). Consult provincial guidelines and local extension experts for treatment threshold and advice.  <i>For Cabbage Seedpod Weevil (adults):</i> Apply at the bud to early flowering stage of crop development. Timing of applications should also be based on the presence of significant populations of adults, as determined by local monitoring. Application prior to adult migration into the field will not be effective. SILENCER® 120 EC will not control larvae developing within the pod, and must be applied prior to egg laying.	Apply the low rate when grasshoppers are up to the 3 <sup>rd</sup> nymphal stage (up to 1 cm in length) or when insect numbers are low. Apply the high rate when grasshoppers are larger, up to but not including winged adults (up to 2.5 cm in length) or when insect numbers are high. If insect pressure is high apply a spray to a 15 m strip around the field. Avoid environmentally sensitive areas and unregistered crops.

**NOTES:** To prevent migration of overwintering flea beetle adults throughout the field, ground-spray a 15 m strip around the field at the first sign of flea beetle feeding. **DO NOT** apply within 7 days of harvest.

#### GRAZING RESTRICTIONS:

DO NOT cut treated fields for silage/forage. DO NOT graze treated fields. DO NOT feed treated crops to livestock. For grasses/non-grasses grown for seed production only, DO NOT feed seed screenings and aftermath to livestock.



# SOMBRERO® 600 FS

This seed treatment gives you long-lasting, early season control of tough insect pests – including wireworms and flea beetles.



#### ACTIVE INGREDIENT:

Imidacloprid 600 g/L = SC

#### APPLICATION RATES AND ACRES TREATED:

- Rate: Please refer to the label for application rates or the table below as these vary based on seed type.
- Acres Treated: Varies

**NOTE:** Registered for use on this seed in commercial seed treatment facilities only.

#### PACKAGING:

- Case: 8 x 1.54 L jugs

#### KEY INSECTS CONTROLLED:

- Wireworms
- Flea beetle

#### HOW IT WORKS:

How it Works: SOMBRERO® 600 FS contains a proven, highly effective seed treatment insecticide that gives you broad-spectrum control of above and below ground pests. Once treated seed is planted, the active ingredient in SOMBRERO® 600 FS is released and forms a protective barrier around the seed. As the plant grows, systemic action transports SOMBRERO® 600 FS throughout the developing stem and leaves, ensuring lasting insect control and giving the crop the defense to grow to its potential.

#### APPLICATION RATES:

Insect	Rate
Flea beetle	667–1333 ml per 100 kg seeds
Wireworms	17–50 ml/100 kg seeds

#### MIXING INSTRUCTIONS:

Application Rate	Component		Total Mixture
	SOMBRERO® 600 FS	Water*	
667 ml/100 kg seed	670 ml	67 ml	737ml
1333 ml/100 kg seed	1330 ml	133 ml	1463 ml

\* See Triple Rinsing Instructions

**NOTE:** A colourant MUST be added in accordance with the PCP Act and the Seeds Act Regulations. A blue colourant must be added when this product is applied to oilseed.

#### STORAGE:

- Do not store SOMBRERO® 600 FS at low temperatures.
- Prior to and during application, SOMBRERO® 600 FS must be thoroughly agitated to ensure uniform mixing of the product.
- Due to viscosity of the material, it should be kept at 10° C prior to and during application. Do not apply direct heat to container.

#### QUICK TIPS:

For optimal insect control, make sure to get good coverage. For resistance management, rotate SOMBRERO® 600 FS with different groups that control the same pests in a field.

# INSECTICIDE

NEW

GROUP 3

## ZIVATA™

An innovation in insect control giving you the same trusted results in a more sustainable formulation with a better user experience.



Low VOC

FORMULATION TECHNOLOGY

### ACTIVE INGREDIENT:

Lambda-cyhalothrin 120g/L as an EC

### APPLICATION RATES AND ACRES TREATED:

- Rate: 17 – 94 ml/ac; standard rate for most pests: 34 ml/ac
- Acres Treated: 45 – 240 ac/jug; standard rate: 120 ac/jug

### PACKAGING:

- Case: 2 x 4.08 L jugs

### KEY INSECTS CONTROLLED:

- Bertha armyworm
- Cabbage looper
- Cabbage seedpod weevil (adults)
- Crucifer flea beetle
- Diamondback moth larvae
- Grasshoppers
- Imported cabbageworm
- Lygus bug

### WATER VOLUME:

- Ground: 40 – 80 L/ac (10 – 20 US gal/ac)
- Aerial: 4 – 16 L/ac (1 – 4 US gal/ac)

### HOW IT WORKS:

ZIVATA™ is a synthetic pyrethroid insecticide formulated with an improved, plant-based solvent that offers fast-acting stomach and contact effects against a broad spectrum of insect pests. This renewably sourced formulation has low volatile organic properties and improves the user experience with a reduced drift potential and product volatility.

### RAINFASTNESS:

1 hour

### REGISTERED AND SUPPORTED TANK MIXES:

#### Fungicides:

- BUMPER® 432 EC
- SORATEL™

### MIXING INSTRUCTIONS:

Compatibility should always be confirmed by premixing small proportional quantities of water, ZIVATA™, and the tank-mix partner in advance.

### CROP ROTATIONS:

No restrictions.

### PRE-HARVEST INTERVAL:

Oilseeds: 7 days

### STORAGE:

Do not freeze.

### GRAZING RESTRICTIONS:

DO NOT cut treated fields for silage/forage. DO NOT graze treated fields. DO NOT feed treated crops to livestock. For grasses/non-grasses grown for seed production only, DO NOT feed seed screenings and aftermath to livestock.

# BUMPER<sup>®</sup> 432 EC

BUMPER<sup>®</sup> 432 EC provides protection against blackleg in canola and enhances yield potential during the early stages of canola growth.



Low VOC

FORMULATION TECHNOLOGY

#### ACTIVE INGREDIENT:

Propiconazole 432 g/L = EC

#### APPLICATION TIMING:

Rosette stage, between 2<sup>nd</sup> true leaf and bolting

#### APPLICATION RATES AND ACRES TREATED:

- Rate: 120 ml/ac
- Acres Treated: 40 ac/jug

#### PACKAGING:

- Case: 2 x 4.8 L jugs

#### KEY DISEASES CONTROLLED IN CANOLA:

- Blackleg

#### HOW IT WORKS:

Broad-spectrum, systemic activity with excellent leaf surface protection and translocation within the plant for additional disease prevention.

#### WATER VOLUME:

- Ground: Minimum 80 L/ac (20 US gal/ac)
- Aerial: 16–20 L/ac (4–5 US gal/ac)

#### APPLICATION TIMING AND CROP STAGING:

Crop	Diseases	Timing
Full rate at 120 ml/ac		
Canola	Blackleg	Rosette stage, between 2 <sup>nd</sup> true leaf and bolting.

#### CROP ROTATIONS:

No restrictions.

#### PRE-HARVEST INTERVAL:

Canola: 60 days

#### GRAZING RESTRICTIONS:

Do not graze livestock within 3 days of spraying.

#### STORAGE:

No temperature restrictions.



Always read and follow label directions.







# Where has all the innovation gone?

While many crop protection companies have turned their attention to the development of seed technologies and collecting “big data”, only ADAMA remains unapologetically committed to providing the kind of innovative crop protection solutions Canadian growers need today.



WE ARE

**Agile  
Innovation**

Filling the innovation void with unique mixtures and formulations.



WE ARE

**Active  
Ingredients**

Leveraging the world's largest library of actives to speed up the pace of innovation.



WE ARE

**All About  
Input**

Listening to growers to ensure we're answering their greatest needs.



WE ARE

**Agri-Retail  
Inclusive**

Partnering with retailers to deliver greater value to them and their customers.

WE ARE

**All In  
on you**



ADAMA



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