



PRODUCT GUIDE

EASTERN CANADA | 2027

[ADAMA.COM](https://adama.com)



ADAMA

GROUP 28 & 3



NEW

SILENCER® DUO

Dual-mode insecticide for resistance management with both superior knockdown and extended control of the most harmful insects.

- ➔ Dual-mode – knockdown and residual
- ➔ Broad-spectrum of targets and crops
- ➔ Flexible rates with application flexibility
- ➔ Proactive resistance management tool
- ➔ Market-leading active ingredients for Grasshoppers, Flea Beetles, Armyworms and Cutworms

CLICK
HERE

Learn more about SILENCER® DUO and its use on other crops on page 92, or scan to visit our website.



Thank you for taking the time to get to know the ADAMA Canada portfolio. We hope that as you look through the pages of this guide you appreciate the breadth and quality of products available to you. Our Canadian team has worked hard to develop products that address Canadian farmers' needs.

Over the past year I have a chance to spend a lot of time with retailers and farmers across Canada. I've shared a message I refer to as 'Winning in a fast-changing world'. We see three very big changes impacting our business and ultimately yours. Those changes are: a painful reset of the global geopolitical order, unprecedented demographic changes, and within the crop protection industry the challenging transition from being a growth industry to a mature industry. These changes have introduced a significant amount of uncertainty and risk to our industry. To navigate these challenges, we believe three key strategies are important for success: delivering something of value, building flexible and resilient supply chain, partnering with the right people.

The value we seek to deliver is a combination of our ever-improving portfolio of products, our responsive service and an 'easy to do business with' approach. The importance of resilient supply chains is becoming increasingly clear as wars and trade disputes add cost and complexity. Over the chaotic last five years we've greatly benefited from having the ability to leverage our global network of plants to ensure we can reliably deliver. Our distribution and retail partners have been critical to our business; their commitment to Canadian farmers is inspiring and we are grateful they've chosen to work with us.

We know the instability of the global landscape creates a lot of uncertainty and risk, but our simple approach to succeeding in this environment has served us well and we hope that you see in us a company you want to work with and in these pages products that are right for your business.



Cornie Thiessen

*General Manager, Canada at
ADAMA Agricultural Solutions*





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Fungicide

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For products that were not registered prior to the printing of this guide, label updates and our latest innovative solutions.

CROP SOLUTIONS

THE RIGHT SOLUTIONS, FAST

CROP SOLUTIONS

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MAKE THE SWITCH TO ADAMA.



INSECTICIDE

ADAMA PRODUCT WITH ACTIVE

PRODUCT REPLACED

CORMORAN®

NOVALURON & ACETAMIPRID

Unique to ADAMA

Delegate™, Vayego®

NEW COSAYR®

CHLORANTRANILIPROLE

Coragen® MaX

SILENCER® 120 EC

LAMBDA-CYHALOTHRIN

Labamba, Matador® 120 EC

NEW SILENCER® DUO

LAMBDA-CYHALOTHRIN &
CHLORANTRANILIPROLE

Voliam Xpress®



FUNGICIDE

ADAMA PRODUCT WITH ACTIVE

PRODUCT REPLACED

BUMPER® 432 EC

PROPICONAZOLE

Low VOC
FORMULATION TECHNOLOGY

Pivot® 418 EC, Tilt® 250E

CAPTAN 480 SC

CAPTAN

Captan 48 SC

CUSTODIA®

TEBUCONAZOLE & AZOXYSTROBIN

Unique to ADAMA

FOLPAN® 80 WDG

FOLPET

Follow WDG

MAXENTIS®

PROTHIOCONAZOLE
& AZOXYSTROBIN

POWERED BY
Asorbital
FORMULATION TECHNOLOGY

Unique to ADAMA

Delaro® Complete, Viatude™

ORIUS® 430 SC

TEBUCONAZOLE

Folicur®

SORADUO™ / SORADUO™ ALL IN

PROTHIOCONAZOLE
& TEBUCONAZOLE

POWERED BY
Asorbital
FORMULATION TECHNOLOGY

Prosaro® XTR, Sphaerex®,
TiLMOR®

SORATEL®

PROTHIOCONAZOLE

POWERED BY
Asorbital
FORMULATION TECHNOLOGY

Proline®

VANTANA™

FLUAZINAM

Allegro® 500 F



PLANT GROWTH REGULATOR

ADAMA PRODUCT WITH ACTIVE

PRODUCT REPLACED

NEW BREVIS™ 150 SC

METAMITRON

Unique to ADAMA



HERBICIDE

	ADAMA PRODUCT WITH ACTIVE	PRODUCT REPLACED
GRASSY WEEDS	ARROW ALL IN® CLETHODIM	Advanced formulation compared to Select®, Statue™
	BISON® 400 L TRALKOXYDIM	Liquid Achieve™ SC Marengo®
	NEW CAZADO™ PINOXADEN & THIENCARBAZONE-METHYL GROUP 1 & 2 GRAMINICIDE	Unique to ADAMA
	LEOPARD® QUIZALOFOP-P-ETHYL	Assure® II, Yuma®, Marshall®
BROADLEAF WEEDS	SOYBEANS AND DRY BEANS	
	DAVAI® 80 SL IMAZAMOX	Unique to Eastern Canada
	DAVAI® A PLUS IMAZAMOX & CLETHODIM	Unique to Eastern Canada
	DAVAI® Q PLUS IMAZAMOX & QUIZALOFOP-P-ETHYL	Unique to Eastern Canada
	ADAMA GLUFOSINATE 150 SL GLUFOSINATE-AMMONIUM	Other glufosinate products
	PHANTOM® 240 SL IMAZETHAPYR	Pursuit®
	PYTHON® IMAZAMOX & BENTAZON	Unique to Eastern Canada
CEREAL BROADLEAF	SQUADRON® METRIBUZIN	Sencor®, TriCor®
	CEREALS	
	2,4-D ESTER 700 2,4-D 2 EH ESTER	Other 2,4-D ESTER products
	BADGE® BROMOXYNIL & MCPA ESTER	Buctril® M, Mextrol®
	BROMOTRIL® 240 EC BROMOXYNIL	Brotex®, Koril®, Pardner®
	ESTEEM ALL IN® FLUROXYPYR, CLOPYRALID & MCPA ESTER	TruSlate® Pro
	FORCEFIGHTER ALL IN® MCPA ESTER, FLUROXYPYR & BROMOXYNIL	Enforcer® M
	MCPA ESTER 600 MCPA 2 EH ESTER 600	Other MCPA ESTER products
	RUSH 24 ALL IN® FLUROXYPYR & 2,4-D ESTER	OcTTain™ XL
	ARMORY® 240 / ARMORY® DIQUAT (DESICCANT)	Reglone®/Dessicash
PRE-PLANT, PRE/POST-HARVEST BURNDOWNS	EMPHASIS® MAX CARFENTRAZONE & BROMOXYNIL	Conquer®
	INVOLVE® 50 WDG TRIBENURON-METHYL	Express® SG
	NEW OXALIS® FLUMIOXAZIN	Valtera® EZ
	NEW SAFACYN® ET SAFLUFENACIL	Eragon®

ADAMA SOLUTIONS BY ACTIVES

	ACTIVE INGREDIENT	ADAMA PRODUCT NAME	SIZES			PAGE #
			Case	Drum	Tote	
HERBICIDES	2,4-D Ester	ADAMA 2,4-D ESTER 700	●	●	●	29
	Bromoxynil	BROMOTRIL® 240 EC	●	●		①
	Bromoxynil + Carfentrazone-ethyl	EMPHASIS® MAX	●			①
	Bromoxynil + MCPA	BADGE®	●	●	●	37
	Bromoxynil + MCPA + Fluroxypyr	FORCEFIGHTER ALL IN®	●	●	●	48
	Clethodim	ARROW ALL IN®	●	●	●	34
	Diquat	ARMORY® 240	●	●	●	32
	Flumioxazin	OXALIS®	●			62
	Fluroxypyr + 2,4-D Ester	RUSH 24 ALL IN®	●	●	●	①
	Fluroxypyr + Clopyralid + MCPA	ESTEEM ALL IN®	●	●		46
	Glufosinate	ADAMA GLUFOSINATE 150 SL	●	●	●	50
	Imazamox	DAVAI® 80 SL	●			43
	Imazamox + Bentazon	PYTHON®	●			67
	Imazamox + Clethodim	DAVAI® A PLUS	●			①
	Imazamox + Quizalofop- p-ethyl	DAVAI® Q PLUS	●			①
	Imazethapyr	PHANTOM® 240 SL	●			64
	MCPA Ester	ADAMA MCPA ESTER 600	●	●	●	59
	Metribuzin	SQUADRON®	●			72
	Pinoxaden + Thiencarbazone-methyl	CAZADO™	●	●		41
	Quizalofop-p-ethyl	LEOPARD®	●	●	●	56
INSECT CONTROL	Acetamiprid + Novaluron	CORMORAN®	●			79
	Chlorantraniliprole	COSAYR®	●			86
	Lambda Cyhalothrin	SILENCER® 120 EC	●			89
	Lambda-Cyhalothrin + Chlorantraniliprole	SILENCER DUO®	●			92
DISEASE CONTROL	Azoxystrobin + Tebuconazole	CUSTODIA®	●			107
	Captan	CAPTAN 480 SC	●			100
	Fluazinam	VANTANA®	●			125
	Folpet	FOLPAN® 80 WDG	●			110
	Propiconazole	BUMPER® 432 EC 	●			97
	Prothioconazole	SORATEL® 	●	●		121
	Prothioconazole + Azoxystrobin	MAXENTIS® 	●	●		114
	Prothioconazole + Tebuconazole	SORADUO™ 	●			119
	Prothioconazole + Tebuconazole	SORADUO™ ALL IN 		●		120
	Tebuconazole	ORIOUS® 430 SC	●			116
PGR	Metamitron	BREVIS™ 150 SC	●			131



To learn more about these products please visit adama.com

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FUNGICIDES

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APPLE SOLUTIONS

HERBICIDES		ADAMA PRODUCTS	
		ARMORY® 240	SQUADRON®
GROUP		22	5
PAGE #		32	72
GRASSY WEEDS	Suppression of Perennial Grasses under Apple Trees	•	
	Barnyard Grass		•
	Fall Panicum		•
	Green Foxtail		•
	Witchgrass		•
	Yellow Foxtail		•
BROADLEAF WEEDS	Cocklebur		•
	Common Ragweed		•
	Corn Spurry		•
	Dandelion		•
	Lady's Thumb		•
	Lamb's Quarters		•
	Redroot Pigweed		•
	Russian Thistle		•
	Shepherd's Purse		•
	Smartweed		•
	Stinkweed		•
	Wild Buckwheat		•
	Wild Mustard		•

8  Always read and follow pesticide label directions.

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INSECTICIDES		ADAMA PRODUCTS
		CORMORAN®
GROUP		4 & 15
PAGE #		79
INSECTS	Aphids	•
	Apple Maggot	•
	Codling Moth	•
	Dogwood Borer	•
	European Apple Sawfly	•
	Green Fruitworm	•
	Gypsy Moth	•
	Japanese Beetle	•
	Leaf Hopper	•
	Lesser Appleworm	•
	Mullein Bug	•
	Oriental Fruit Moth	•
	Plum Curculio	•
	Tarnished Plant Bug	•
	Tentiform Leafminer	•

S = Suppression

NOTE: Refer to the label for specific product information, full list of controlled pests and crop registrations and always read and follow the label.

FUNGICIDES		ADAMA PRODUCTS		
		CAPTAN 480 SC	FOLPAN® 80 WDG	VANTANA™
GROUP		M04	M04	29
PAGE #		100	110	125
DISEASES	Alternaria Leaf Spot		•	
	Bitter Rot	•		
	Black Rot	•	•	S
	Brooks Spot	•	•	S
	Bull's Eye Rot	•		
	Cedar Apple Rust			•
	Fly Speck	•	•	•
	Quince Rust			S
	Scab	•	•	•
	Sooty Blotch	•	•	•

PLANT GROWTH REGULATOR		ADAMA PRODUCTS
		BREVIS™ 150 SC
PAGE #		131
FRUIT THINNING	Apples	•
	Pears	•

BARLEY SOLUTIONS

HERBICIDES		ADAMA PRODUCTS											
		PRE-PLANT			IN-CROP								
		EMPHASIS® MAX + Glyphosate	INVOLVE® + Glyphosate	SAFACYN® ET + Glyphosate	2-4, D ESTER 700	BADGE®	BISON® 400 L	BROMOTRIL® 240 EC	ESTEEM ALL IN®	FORCEFIGHTER ALL IN®	MCPA ESTER 600	RUSH 24 ALL IN®	SAFACYN® ET
GROUP		6 & 14	2	14	4	4 & 6	1	6	4	4 & 6	4	4	14
PAGE #		①	53	70	29	37	39	①	46	48	59	①	70
GRASSY WEEDS	Green Foxtail	•	•										
	Persian Darnel	•	•										
	Wild Oats	•	•				•						
BROADLEAF WEEDS	American Nightshade	•				•		•		•			
	Annual Sow Thistle	•			•				•		•		
	Burdock				•				•		•	•	
	Canada Fleabane	•	•	•									•
	Canada Thistle	•	S		•	•			•	•	•		
	Cleavers	•							•	•		•	
	Cocklebur	•			•	•		•	•	•	•	•	
	Common Ragweed	•	•	•	•	•		•	•		•	•	•
	Corn Spurry										•		
	Dandelion	•	•	S	•				•		•		
	Field Bindweed				•						•		
	Horsetail				•				•		•	•	
	Kochia	•	•		•	•		•	•	•	•	•	
	Lady's Thumb	•	•	•	•	•		•		•	•	•	
	Lamb's Quarters	•	•	•	•	•		•	•	•	•	•	
	Narrow-Leaved Hawk's Beard	•	•		•								
	Perennial Sow Thistle			•	•	•			•	•	•	S	
	Redroot Pigweed	•	•	•	•	•			•	•	•	S	•
	Russian Thistle	•	•		•	•		•		•	•		
	Shepherd's Purse	•		•	•	•			•	•	•	•	
	Smartweed	•			•	•		•		•	•		
	Stinkweed	•	•	•	•	•		•	•	•	•	•	
	Volunteer Canola	•	•		•	•			•	•		•	•
	Wild Buckwheat	•	•	•	•	•		•	•	•		•	•
	Wild Mustard	•	•	•	•	•		•	•	•	•	•	

10  Always read and follow pesticide label directions.

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INSECTICIDES		ADAMA PRODUCTS		
		COSAYR®	SILENCER® 120 EC	SILENCER® DUO
				
GROUP		28	3	28 & 3
PAGE #		86	89	92
INSECTS	Armyworm	•	•	•
	Beet Armyworm	•		
	Corn Earworm	•		
	Cutworms	•		
	European Corn Borer	•		
	Grasshoppers	•	•	•

FUNGICIDES		ADAMA PRODUCTS					
		BUMPER® 432 EC	CUSTODIA®	MAXENTIS®	ORIOUS® 430 SC	SORADUO™	SORATEL®
							
GROUP		3	3 & 11	3 & 11	3	3	3
PAGE #		97	107	114	116	119	121
DISEASES	Fusarium Head Blight					S	S
	Leaf Rust	•	•		•		
	Net Blotch	•	•	•	•		•
	Powdery Mildew	•			•		
	Scald	•		•	•		•
	Septoria Leaf Blotch	•	•	S	•		
	Spot Blotch	•	•	•	•		•
	Stem Rust	•	•		•		
	Stripe Rust		•	•	•		
	Tan Spot		•				

S = Suppression

NOTE: Refer to the label for specific product information, full list of controlled pests and crop registrations and always read and follow the label.



To learn more about these products please visit adama.com

BLUEBERRY SOLUTIONS

HERBICIDES		ADAMA PRODUCTS		
		ARROW ALL IN ®	INVOLVE® 50 WDG	SQUADRON®
GROUP		1	2	5
PAGE #		34	53	72
LOWBUSH	Bracken Fern		•	
	Bunchberry		•	
	Speckled Alder		•	
	Wild Rose		•	
	Yellow Loosestrife		•	
HIGHBUSH	Annual Broadleaf Weeds			•
	Barnyard Grass	•		
	Crabgrass (smooth and large)	•		
	Green Foxtail	•		
	Fall Panicum	•		
	Persian Darnel	•		
	Proso Millet	•		
	Quackgrass	•		
	Volunteer Cereals (wheat, barley, oats)	•		
	Witchgrass	•		
	Yellow Foxtail	•		

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BLUEBERRY SOLUTIONS

INSECTICIDES		ADAMA PRODUCTS
		CORMORAN®
GROUP		4&15
PAGE #		79
INSECTS	Aphids	•
	Blueberry Gall Midge	•
	Blueberry Flea Beetle	•
	Blueberry Maggot Fly	•
	Blueberry Spanworm	•
	Cherry Fruitworm	•
	Cranberry Fruitworm	•
	Japanese Beetle	•
	Spotted Wing Drosophila	•
	Strawberry Rootworm	•
Thrips	•	

FUNGICIDES		ADAMA PRODUCTS				
		BUMPER® 432 EC	CAPTAN 480 SC	MAXENTIS®	SORATEL®	VANTANA®
GROUP		3	M04	3&11	3	29
PAGE #		97	100	114	121	125
DISEASES	Fruit Anthracnose					S
	Fruit Rot		•		•	
	Leaf Rust			S	S	
	Mummy Berry	•	•		•	S
	Phomopsis Fruit Rots					S
	Septoria Leaf Spot				S	
	Valdensinia Leaf Spot				•	•

S = Suppression

NOTE: Refer to the label for specific product information, full list of controlled pests and crop registrations and always read and follow the label.

CORN SOLUTIONS

HERBICIDES



ADAMA PRODUCTS

	GROUP	PAGE #						
			PRE-PLANT		IN-CROP			
			OXALIS®	SAFACYN® ET + Glyphosate	2-4, D ESTER 700	BADGE®	BROMOTRIL® 240 EC	
			14	14	4	4 & 6	6	
			62	70	29	37		
BROADLEAF WEEDS	Green Foxtail		S					
	American Nightshade					•	•	
	Annual Sow Thistle				•			
	Burdock				•			
	Canada Fleabane		•					
	Canada Thistle				•	•		
	Cocklebur				•	•	•	
	Common Ragweed		•	•	•	•	•	
	Dandelion		•					
	Field Bindweed				•			
	Horsetail				S			
	Kochia		•		•	•	•	
	Lady's Thumb				S	•	•	
	Lamb's Quarters		•	•	•	•	•	
	Narrow-Leaved Hawk's Beard				•			
	Perennial Sow Thistle				•	•		
	Redroot Pigweed		•	•	•	•		
	Russian Thistle				•	•	•	
	Shepherd's Purse				•	•		
	Smartweed				S	•	•	
	Stinkweed				•	•	•	
	Volunteer Canola				•	•		
	Wild Buckwheat			•	S	•	•	
	Wild Mustard			•	•	•	•	

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CORN SOLUTIONS

INSECTICIDES		ADAMA PRODUCTS		
		CORMORAN [®]	COSAYR [®]	SILENCER [®] 120 EC
GROUP		4 & 15	28	3
PAGE #		79	86	89
INSECTS	Aphids	•		
	Armyworm		•	
	Beet Army Worm		•	
	Black Cutworm		•	
	Corn Earworm		•	•
	Cutworms			•
	European Corn Borer		•	•
	Fall Army Worm		•	•
	Variegated Cutworm		•	
	Western Bean Cutworm		•	
FUNGICIDES		ADAMA PRODUCTS		
		BUMPER [®] 432 EC	SORATEL [®]	
GROUP		3	3	
PAGE #		97	121	
DISEASES	Eye Spot	•	•	
	Gibberella Ear Rot		S	
	Grey Leaf Spot	•	•	
	Helminthosporium Leaf Spot	•		
	Northern Corn Leaf Blight	•	•	
	Rusts	•	•	
	Southern Corn Leaf Blight	•		

S = Suppression

* Sweet Corn only

NOTE: Refer to the label for specific product information, full list of controlled pests and crop registrations and always read and follow the label.

To learn more about these products please visit adama.com

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HERBICIDES



ADAMA PRODUCTS

		PRE-PLANT			IN-CROP				
		EMPHASIS [®] MAX + Glyphosate	INVOLVE [®] + Glyphosate	SAFACYN [®] ET + Glyphosate	ARMORY [®] 240	BADGE [®]	BROMOTRIL [®] 240 EC	ESTEEM ALL IN [®]	MCPA ESTER 600
	GROUP	6&14	2	14	22	4&6	6	4	4
	PAGE #	①	53	70	32	37	①	46	59
GRASSY WEEDS	Green Foxtail	•	•						
	Persian Darnel	•	•						
	Wild Oats	•	•						
BROADLEAF WEEDS	American Nightshade	•				•	•		
	Annual Sow Thistle	•						•	•
	Burdock							•	•
	Canada Fleabane	•	•	•					
	Canada Thistle	•	S			•		•	•
	Cleavers	•						•	
	Cocklebur	•				•	•	•	•
	Common Ragweed	•	•	•		•	•	•	•
	Corn Spurry				•				•
	Dandelion	•	•	S				•	•
	Field Bindweed								•
	Horsetail							•	•
	Kochia	•	•			•	•	•	•
	Lady's Thumb	•	•	•		•	•		•
	Lamb's Quarters	•	•	•		•	•	•	•
	Narrow-Leaved Hawk's Beard	•	•						
	Perennial Sow Thistle			•		•		•	•
	Redroot Pigweed	•	•	•		•		•	•
	Russian Thistle	•	•			•	•		•
	Shepherd's Purse	•		•		•		•	•
	Smartweed	•				•	•		•
	Stinkweed	•	•	•		•	•	•	•
	Volunteer Canola	•	•			•		•	
	Wild Buckwheat	•		•		•	•	•	
	Wild Mustard	•	•	•		•	•	•	•

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INSECTICIDES		ADAMA PRODUCTS		
		COSAYR®	SILENCER® 120 EC	SILENCER® DUO
GROUP		28	3	28 & 3
PAGE #		86	89	92
INSECTS	Armyworm	•	•	•
	Beet Armyworm	•		
	Corn Earworm	•		
	Cutworms	•		
	Fall Armyworm	•		
	European Corn Borer	•		
	Grasshoppers	•	•	•

FUNGICIDES		ADAMA PRODUCTS				
		BUMPER® 432 EC	CUSTODIA®	MAXENTIS®	ORIOUS® 430 SC	SORATEL®
GROUP		3	3 & 11	3 & 11	3	3
PAGE #		97	107	114	116	121
	Crown Rust	•	•	•	•	•
	Septoria Leaf Blotch	•	•			
	Stem Rust		•		•	

S = Suppression

NOTE: Refer to the label for specific product information, full list of controlled pests and crop registrations and always read and follow the label.



To learn more about these products please visit adama.com

POTATO SOLUTIONS

HERBICIDES		ADAMA PRODUCTS		
		ARMORY® 240	ARROW ALL IN®	SQUADRON®
GROUP		22	1	5
PAGE #		32	34	72
GRASSY WEEDS	Barnyard Grass		•	•
	Crabgrass (smooth and large)		•	•
	Fall Panicum		•	•
	Green Foxtail		•	•
	Persian Darnel		•	
	Proso Millet		•	
	Quackgrass		•	
	Volunteer Canary Grass		•	
	Volunteer Cereals (wheat, barley, oats)		•	
	Volunteer Corn		•	
	Wild Oats		•	
	Witchgrass		•	•
	Yellow Foxtail		•	•
BROADLEAF WEEDS	Cocklebur			•
	Common Ragweed			•
	Corn Spurry			S
	Dandelion			•
	Lady's Thumb			•
	Lamb's Quarters			•
	Redroot Pigweed			•
	Russian Thistle			•
	Shepherd's Purse			•
	Smartweed			•
	Stinkweed			•
	Wild Buckwheat			•
	Wild Mustard			•
DESICCANT	Potato Vine	•		

18  Always read and follow pesticide label directions.

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POTATO SOLUTIONS

INSECTICIDES		ADAMA PRODUCTS		
		CORMORAN®	COSAYR®	SILENCER® 120 EC
GROUP		4&15	28	3
PAGE #		79	86	89
INSECTS	Aphids	•		
	Armyworm	•		•
	Cabbage Looper	•		
	Colorado Potato Beetle	•	•	•
	European Corn Borer	•	•	•
	Leafhopper	•		•
	Potato Flea Beetle			•
	Tarnished Plant Bug			•
	Tuber Flea Beetle			•

FUNGICIDES		ADAMA PRODUCTS	
		CAPTAN 480 SC	VANTANA™
GROUP		M04	29
PAGE #		100	125
DISEASES	Early Blight	•	
	Late Blight	•	•
	White Mould		•

S = Suppression

NOTE: Refer to the label for specific product information, full list of controlled pests and crop registrations and always read and follow the label.

SOYBEAN SOLUTIONS

HERBICIDES



ADAMA PRODUCTS

	GROUP	PAGE #	PRE-PLANT				IN-CROP												HARVEST AID / DESICCANT	
			INVOLVE® + Glyphosate	OXALIS®	SAFACYN® ET + Glyphosate	SQUADRON®	ARROW ALL IN®	DAVAI® 80 SL	DAVAI® A PLUS	DAVAI® Q PLUS	ADAMA GLUFOSINATE 150 SL	LEOPARD®	PHANTOM® 240 SL	PYTHON®			ARMORY® 240	SAFACYN® ET		
			2	14	14	5	1	2	1&2	1&2	10	1	2	2&6			22	14		
			53	62	70	72	34	43	①	①	50	56	64	67			32	70		
GRASSY WEEDS	Barnyard Grass					•	•	•	•	•	•	•	•	•						
	Crabgrass (large, smooth)					•	•		•				•							
	Fall Panicum					•	•		•	•		•								
	Green Foxtail		•	S		•	•	•	•	•	•	•	•	•						
	Persian Darnel		•				•	•	•	•				•						
	Proso Millet						•			•		•	•							
	Quackgrass						•		S	S	S	•								
	Volunteer Canary Seed							•	•	•				•						
	Volunteer Cereals (wheat, barley)		•				•	•	•	•	•	•		•						
	Volunteer Corn						•		•	•		•								
	Wild Oats		•				•	•	•	•	•	•		•						
	Witchgrass					•	•		•			•	•							
	Yellow Foxtail					•	•	•	•	•		•	•	•						
BROADLEAF WEEDS	Canada Fleabane		•	•	•															
	Canada Thistle		S								S									
	Cleavers							S	S	S	•			S						
	Cocklebur					•							•							
	Common Ragweed		•	•	•	•							•							
	Dandelion		•	•	S	•					•									
	Eastern Black Nightshade												•							
	Kochia		•	•							•									
	Lady's Thumb		•		•	•					•		•							
	Lamb's Quarters		•	•	•	•		•	•	•	•		•	•						
	Narrow-Leaved Hawk's Beard		•																	
	Perennial Sow Thistle				•						•									
	Redroot Pigweed		•	•	•	•		•	•	•	•		•	•						
	Russian Thistle					•					•									
	Shepherd's Purse				•	•		•	•	•	•			•						
	Smartweed					•		•	•	•	•		•	•						
	Stinkweed		•		•	•		•	•	•	•			•						
	Velvetleaf					•							•							
	Volunteer Canola		•					•	•	•				•						
	Wild Buckwheat		•		•	•		S	S	S	•		•	S						
	Wild Mustard		•		•	•		•	•	•	•		•	•						
	Desiccant																•	•		

20 Always read and follow pesticide label directions.

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SOYBEAN SOLUTIONS

INSECTICIDES		ADAMA PRODUCTS		
				
		COSAYR®	SILENCER® 120 EC	SILENCER® DUO
GROUP		28	3	28 & 3
PAGE #		86	89	92
INSECTS	Armyworm	•		
	Bean Aphid		•	•
	Bean Leaf Beetle		•	•
	Cutworms	•	•	•
	Grasshoppers	•	•	•
	Lygus Bugs		•	
	Pea Aphid		•	•
	Soybean Aphids		•	•
	Western Bean Cutworm		•	•

FUNGICIDES		ADAMA PRODUCTS				
						
		BUMPER® 432 EC	CUSTODIA®	MAXENTIS®	SORATEL®	VANTANA™
GROUP		3	3 & 11	3 & 11	3	29
PAGE #		97	107	114	121	125
DISEASES	Aerial Web Blight	•				
	Asian Soybean Rust		•		•	
	Frog-Eye Leaf Spot	•	•		•	
	White Mould			•		S

S = Suppression

NOTE: Refer to the label for specific product information, full list of controlled pests and crop registrations and always read and follow the label.



To learn more about these products please visit adama.com

WHEAT SOLUTIONS

HERBICIDES				ADAMA PRODUCTS														
		GROUP	PAGE #	PRE-PLANT			IN-CROP											PRE-HARVEST
				EMPHASIS® MAX + Glyphosate	INVOLVE® + Glyphosate	SAFACYN® ET + Glyphosate	2-4, D ESTER 700	BADGE®	BISON® 400 L	BROMOTRIL® 240 EC	CAZADO™	ESTEEM ALL IN®	MCPA ESTER 600	RUSH 24 ALL IN®	FORCEFIGHTER ALL IN®			
				6 & 14	2	14	4	4 & 6	1	6	1 & 2	4	4	4	4 & 6	14		
				1	53	70	29	37	39	1	41	46	59	1	48	70		
Registered Crops		Registered in Spring Wheat																
		Registered in Winter Wheat																
BROADLEAF WEEDS	Green Foxtail	•	•								•							
	Persian Darnel	•	•								•							
	Volunteer Oats										•							
	Wild Oats	•	•						•		•							
	American Nightshade	•						•		•					•			
	Annual Sow Thistle	•					•					•	•					
	Burdock											•	•	•				
	Canada Fleabane	•	•	•												•		
	Canada Thistle	•	S				•	•					•	•		•		
	Cleavers	•									•	•			•	•		
	Cocklebur	•					•	•		•		•	•	•	•	•		
	Common Ragweed	•	•	•		•		•				•	•	•			•	
	Corn Spurry													•				
	Dandelion	•	•	S			•						•	•				
	Field Bindweed						•							•				
	Horsetail						•						•	•	•			
	Kochia	•	•			•	•			•			•	•	•	•		
	Lady's Thumb	•	•	•		•	•			•				•	•	•		
	Lamb's Quarters	•	•	•		•	•			•	•	•	•	•	•	•		
	Narrow-Leaved Hawk's Beard	•	•				•											
	Perennial Sow Thistle					•		•					•	•	S	•		
	Redroot Pigweed	•	•	•		•		•			•		•	•	S	•	•	
	Russian Thistle	•	•							•	•			•		•		
	Shepherd's Purse	•		•			•				•		•	•	•	•		
	Smartweed	•					•	•		•				•		•		
	Stinkweed	•	•	•		•		•					•	•	•	•		
	Volunteer Canola	•	•				•	•					•		•	•	•	
	Wild Buckwheat	•	•	•			•			•			•		•	•	•	
	Wild Mustard	•	•	•			•			•			•	•	•	•		

22  Always read and follow pesticide label directions.

WHEAT SOLUTIONS

INSECTICIDES		ADAMA PRODUCTS		
		COSAYR®	SILENCER® 120 EC	SILENCER® DUO
				
GROUP		28	3	28 & 3
PAGE #		86	89	92
INSECTS	Armyworm	•	•	•
	Beet Armyworm	•		
	Corn Earworm	•		
	Cutworms	•		
	European Corn Borer	•		
	Fall Armyworm	•		
	Grasshoppers	•	•	•

FUNGICIDES		ADAMA PRODUCTS					
		BUMPER® 432 EC	CUSTODIA®	MAXENTIS®	ORIUS® 430 SC	SORADUO™	SORATEL®
							
GROUP		3	3 & 11	3 & 11	3	3	3
PAGE #		97	107	114	116	119	121
DISEASES	Fusarium Head Blight				S	S	S
	Glume Blotch	•			•		•
	Leaf Rust	•	•		•		•
	Powdery Mildew	•			•		
	Septoria Leaf Blotch	•	•		•		•
	Septoria Leaf Spot			S			
	Spot Blotch			•			
	Stem Rust	•	•		•		
	Stripe Rust	•	•	•	•		
	Tan Spot	•	•	•	•		•

S = Suppression

NOTE: Refer to the label for specific product information, full list of controlled pests and crop registrations and always read and follow the label.



To learn more about these products please visit adama.com

VEGETABLE SOLUTIONS

HERBICIDES		ADAMA PRODUCTS					
		ARMORY® 240	ARROW ALL IN®	BROMOTRIL® 240 EC	LEOPARD®	PHANTOM® 240 SL	SQUADRON®
GROUP		22	1	6	1	2	5
PAGE #		32	34	①	56	64	72
GRASSY WEEDS	Barnyard Grass		•		•	•	•
	Crabgrass		•			•	•
	Fall Panicum		•		•		•
	Green Foxtail		•		•	•	•
	Persian Darnel		•				
	Proso Millet		•		•	•	
	Quackgrass		•		•		
	Volunteer Cereals		•		•		
	Volunteer Corn		•		•		
	Volunteer Canary Grass		•				
	Wild Oats		•		•		
	Witchgrass		•		•		•
	Yellow Foxtail		•		•	•	•
BROADLEAF WEEDS	American Nightshade			•			
	Cocklebur			•		•	•
	Common Ragweed			•		•	
	Kochia			•			
	Lady's Thumb			•		•	•
	Lamb's Quarters			•		•	•
	Redroot Pigweed					•	•
	Russian Thistle			•			•
	Shepherd's Purse						•
	Smartweed			•		•	
	Stinkweed			•			•
	Wild Buckwheat			•		•	•
	Wild Mustard			•		•	•
DESICCANT	Weeds in Stale Seedbeds	•					
	Weeds in Vegetables (Inter-Row Directed)	•					

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INSECTICIDES		ADAMA PRODUCTS		
		CORMORAN®	COSAYR®	SILENCER® 120 EC
GROUP		4 & 15	28	3
PAGE #		79	86	89
INSECTS	Alfalfa Looper	•		
	Aphid	•		
	Armyworm	•	•	
	Cabbage Looper	•	•	•
	Cabbage Seedpod Weevil			•
	Colorado Potato Beetle	•	•	•
	Cutworms		•	•
	Diamondback Moth	•	•	•
	European Corn Borer	•	•	•
	Flea Beetle			•
	Grasshoppers		•	•
	Imported Cabbageworm	•	•	•
	Leaf Hopper	•		•
	Lygus Bug	•		•
	Potato Flea Beetle			•
	Potato Leaf Hopper			•
	Swede Midge	•	•	•
	Tarnished Plant Bug	•		•
	Tentiform Leaf Miner			•

NOTE: Refer to the label for a complete list of crops and insects controlled in each.



To learn more about these products please visit adama.com

VEGETABLE SOLUTIONS

(CONT'D)

		FUNGICIDES		ADAMA PRODUCTS	BUMPER® 432 EC	CAPTAN 480 SC	FOLPAN® 80 WDG	VANTANA™
CROP	DISEASE							
		GROUP	3	M04	M04	29		
		PAGE #	97	100	110	125		
Asparagus	Rust		•					
Bulb Onion (Crop sub-group 3- 07A) ¹	Botrytis Leaf Blight						•	
	Purple Blotch						•	
Rutabagas	Powdery Mildew		•					
Carrot	Alternaria Leaf Blight						•	
	White Mould						•	
Cucumbers (field only)	Anthrachnose			•	•			
	Scab			•				
	Downy Mildew					•		
Tomatoes	Anthrachnose			•	•			
	Septoria Leaf Spot			•				
Field Peppers	Phytophthora Blight						•	
	Anthrachnose			•				
Ginseng	Alternaria Blight						•	
	Botrytis Blight						•	
	Cylindracarpon Root Rot			S				
	Damping-Off			•				
	Grey Mould			•				
	Pythium Root Rot			•				
	Phytophthora Root Rot			•				
	Rhizoctonia Root Rot			•			•	
Soil and greenhouse bench treatments	Damping-Off			•				
	Fungus Root Rot Diseases of Seedlings			•				
Melons, Pumpkins, Squash	Anthrachnose					•		
	Downy Mildew					•		
Head and Stem Brassica (Crop sub-group 5A) ¹	Clubroot						•	
Leafy Brassica Greens (Crop sub-group 5B) ¹	Clubroot						•	

S = Suppression

¹For the complete list of crops within the Crop sub-group, refer to label or the PRD website.

NOTE: Refer to the label for specific product information, full list of controlled pests and crop registrations and always read and follow the label.

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HERBICIDE

WEED CONTROL

CLICK BELOW TO NAVIGATE



Insecticide

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Fungicide

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Plant Growth Regulator

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Additional Resources

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LOADING...



For products that were not registered prior to the printing of this guide, label updates and our latest innovative solutions, please scan here to discover more details.



HERBICIDE

PRE-PLANT/POST-HARVEST

2,4-D ESTER 700	29
INVOLVE® 50 WDG	53
OXALIS® NEW	62
SAFACYN® ET NEW	70
SQUADRON®	72

CEREAL GRASSY

BISON® 400 L	39
CAZADO™ NEW	41

PULSE & SOYBEAN / OILSEED GRASSY

ARROW ALL IN®	34
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CEREAL BROADLEAF

2,4-D ESTER 700	29
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ESTEEM ALL IN®	46
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BROAD SPECTRUM

DAVAI® 80 SL	43
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PHANTOM® 240 SL	64
PYTHON®	67
SQUADRON®	72

HARVEST AID

ARMORY® 240 & ARMORY®	32
SAFACYN® ET NEW	70

RE-CROPPING RESTRICTIONS WITH IMIDAZOLINONE PRODUCTS	76
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2,4-D ESTER 700

Provides reliable post-emergent control of broadleaf weeds and great tank-mix flexibility in wheat, barley, rye, and corn.



ACTIVE INGREDIENT

2,4-D Ester 660 g/L = EC

APPLICATION RATES

Rate: 200–600 ml/ac

PACKAGING & ACRES TREATED

Case: 2 x 10 L = 17–50 ac/jug

Drum: 120 L = 200–600 acres

Tote: 500 L = 850–2500 acres

Tote Max: 1000 L = 1665–5000 acres

WATER VOLUME

Ground: 20–60 L/ac
(5–15 US gal/ac)

Aerial: Minimum 12 L/ac
(3 US gal/ac)

RAINFASTNESS

2 hours

REGISTERED CROPS

- Barley
- Field Corn
- Rye (spring, fall)
- Wheat (spring, winter)

WEEDS CONTROLLED

Susceptible weeds	Rate
Annual Sow-Thistle ¹ , Bluebur, Burdock ¹ , Cocklebur, Daisy Fleabane, False Flax, False Ragweed, Flixweed, Giant Ragweed, Goat's-Beard, Kochia, Lamb's Quarters, Mustards (except dog and tansy), Narrow-Leaved Hawk's-Beard (in fall, and at the 1–2 leaf stage in spring), Plantain, Prickly Lettuce, Ragweed, Redroot Pigweed, Russian Pigweed, Russian Thistle, Shepherd's Purse, Stinging Nettle, Stinkweed, Sweet Clover (seedling), Thyme-Leaved Spurge, Volunteer Canola, Wild Radish, Wild (prairie) Sunflower	Small seedlings (2–4 leaf), growing rapidly, good growing conditions: 202–324 ml/ac (0.5–0.8 L/ha) Large weeds, dry or cold weather, heavy infestations: 324 ml/ac (0.8 L/ha)
Harder-to-control weeds	Rate
Curled Dock ¹ , Dog Mustard, Field Peppergrass, Flixweed (if treated before bolting in spring), Groundsel, Hairy Galinsoga, Hawkweed, Heal-All, Knotweed ¹ , Narrow-Leaved Hawk's-Beard (if treated before bolting in spring), Oak-Leaved Goosefoot, Pineapple Weed, Prostrate Pigweed, Purslane, Sheep Sorrel, Tansy Mustard, Tumble Pigweed, Velvetleaf, Volunteer Canola (all types, 4–6 leaf)	Small seedlings (2–4 leaf), growing rapidly, good growing conditions: 364–526 ml/ac (0.9–1.3 L/ha) Large weeds, dry or cold weather, heavy infestations: 526 ml/ac (1.3 L/ha)

¹ All types

2,4-D ESTER 700

WEEDS CONTROLLED (CONT'D)

Very-Hard-to-Control Weeds	Rate
Biennial Wormwood, Blue Lettuce, Bull Thistle, Burdock, Buttercup, Canada Thistle, Chicory, Curled Dock, Dandelion, Field Bindweed, Field Chickweed ² , Field Horsetail ² , Gumweed, Hedge Bindweed, Hemp-Nettle ² (if treated before the 4-leaf stage), Hoary Cress, Lady's Thumb ² , Leafy Spurge, Mouse-Eared Chickweed ² , Perennial Sow Thistle, Russian Knapweed, Scentless Mayweed, Smartweed ² , Tartary Buckwheat, Teasel, Volunteer Sunflower, Wild Buckwheat ² , Yellow Rocket ¹	Top growth only control to be expected. Small seedlings (2-4 leaf), growing rapidly, good growing conditions: 445-526 ml/ac (1.1-1.3 L/ha) Large weeds, dry or cold weather, heavy infestations: 526 ml/ac (1.3 L/ha)

¹ 1-3 leaf stage

² Use highest listed rate for suppression.

CROP STAGING

Crop	Timing	Rate
Barley, Rye, Wheat (spring, winter)	Pre-plant or pre-emergent	200-500 ml/ac
Barley, Rye, Wheat (spring, winter)	4-leaf to flag leaf	Up to 500 ml/ac
Winter Wheat, Fall Rye	Pre-plant or pre-emergent	200-500 ml/ac
Winter Wheat, Fall Rye	In spring, from full tillering to shot blade stage. Do not apply during and after flag leaf stage. Do not apply to seedling cereals in fall.	Up to 300 ml/ac
Field Corn	Before the 6-leaf stage. Application at later stages will damage corn. If applying at later stage, use a shielded spray, keep spray off corn foliage. Do not apply within 2 weeks of silking and tasseling.	
Established grasses for forage and seed production	In spring, up to shot blade of grasses or in fall after harvest. Application during flower or pollination development will reduce seed yield.	Seed production: Up to 300 ml/ac Hay and pasture crops: Up to 600 ml/ac

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2,4-D ESTER 700

REGISTERED AND SUPPORTED TANK MIXES†

Herbicides:

- BISON® 400 L
- Glyphosate
- BROMOTRIL® 240 EC
- INVOLVE® 50 WDG

Fungicide:

- BUMPER® 432 EC

† Refer to page 139 for PRD tank-mixing directives.

MIXING INSTRUCTIONS

1. Fill sprayer tank ½ full of water.
2. Start sprayer tank agitation.
3. Add the required amount of 2,4-D ESTER 700 into the sprayer.
4. Agitate until the herbicide is thoroughly mixed.
5. Continue agitation while adding any required adjuvants or surfactants for tank-mix partners.
6. Complete filling the tank with water as agitation continues.

NOTE: If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).

CROP ROTATIONS

No restrictions

PRE-HARVEST INTERVAL

90 days

RE-ENTRY INTERVAL (REI)

N/A

GRAZING RESTRICTIONS

30 days

STORAGE

May be stored at any temperature.
Shake well before using.

QUICK TIPS:

Avoid spray drift to any off-target vegetation. Coarse sprays are less likely to drift. Do not spray during periods of high winds.



ARMORY® 240 & ARMORY®

Provides fast drydown of crops, protecting yield and grade, and reducing disease transmission late in the season.



ACTIVE INGREDIENT

Diquat 240 g/L = SL

APPLICATION RATES

Ground: 360–1860 ml/ac

Aerial: 690–1090 ml/ac

Potatoes:

- Ground: 510–1420 ml/ac
- Aerial: 690–930 ml/ac

Vegetables:

- Ground: 930–1860 ml/ac
- Aerial: Do not apply by air.

Beans, Canola, Chickpeas, Lentils, Field Peas, Sunflowers:

- Ground: 500–690 ml/ac
- Aerial: 690–930 ml/ac

Legumes:

- Ground: 690–1090 ml/ac
- Aerial: 690–1090 ml/ac

Oats:

- Ground: 360–510 ml/ac
- Aerial: Do not apply by air.

PACKAGING & ACRES TREATED

Case: 2 x 10 L jugs

Tote: 450 L

Drum: 5 x 120 L

Tote Max: 1000 L

Acres Treated: 7–28 ac/jug; 83–333 ac/drum; 320–1250 ac/tote
700–2775 ac/tote max

WATER VOLUME

Ground: 90–200 L/ac (24–53 US gal/ac)

Aerial: Minimum 18 L/ac (5 US gal/ac)

RAINFASTNESS

30 minutes

REGISTERED CROPS

This is only a partial list of crops registered for use with ARMORY® 240 & ARMORY®. For the full list, please refer to the ARMORY® 240 & ARMORY® label.

- Alfalfa
- Beans (white and red kidney, adzuki)
- Birdsfoot Trefoil
- Canola
- Peas (field and dry)
- Potatoes
- Red and White Clover
- Soybeans
- Sunflowers

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ARMORY® 240 & ARMORY®

OTHER USES AND WEEDS CONTROLLED

- Potato Vines
- Corn Spurry in Oats
- Desiccation for Beans, and Legume forage seed crops
- Weeds in stale seedbeds (vegetables and field crops)
- Weeds in Vegetables (inter-row directed)
- Suppression of Perennial Grasses under Apple trees

HOW IT WORKS

ARMORY® 240 & ARMORY® works on contact to disrupt plant cells and is rainfast in 30 minutes, leading to more rapid drydown of plants and weeds when compared to systemic herbicides. Harvesting can typically begin within 4–10 days, depending on crop and weather conditions.

REGISTERED AND SUPPORTED TANK MIXES†

- Agral® 90, LI 700®, Liberate® and other non-ionic surfactants (NIS)
- Carfentrazone

†Refer to page 139 for PRD tank-mixing directives.

MIXING INSTRUCTIONS

1. Fill sprayer tank $\frac{3}{4}$ full with water.
2. Add the required amount of ARMORY® 240 & ARMORY® into the sprayer.
3. Agitate until the herbicide is thoroughly mixed.
4. Continue agitation while adding the required amount of registered surfactant at the recommended rate.
5. Complete filling the tank with water as agitation continues.

NOTE: If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).

ADJUVANT RATE

- LI 700® @ 0.25% v/v
- Non-ionic surfactant (NIS) @ 0.10% v/v

RE-ENTRY INTERVAL (REI)

24 hours

GRAZING RESTRICTIONS

Crop waste remaining after harvest may be used as a feed supplement for livestock.

STORAGE

Do not freeze.

QUICK TIPS:

Best results under cloudy conditions or in the evening. Suggested conditions for aerial applications are a temperature below 25°C, humidity above 50% and wind speed below 9 km/hr at flying height.



ARROW ALL IN[®]

Convenient and easy to use, ARROW ALL IN[®] delivers effective Volunteer Corn control, including PowerCore[®] Enlist[™] trait varieties, while also providing reliable grassy weed control across a wide range of row and specialty crops.

ACTIVE INGREDIENT

Clethodim 120 g/L = EC

APPLICATION RATES

Rate: 100–300 ml/ac

PACKAGING & ACRES TREATED

Case: 2 x 6 L jugs

Drum: 96 L

Tote: 450 L

Acres Treated: 20–60 ac/jug
320–960 ac/drum
1500–4500 ac/tote



WATER VOLUME

Ground: 40 L/ac (10 US gal/ac)

Aerial: Do not apply by air.

RAINFASTNESS

1 hour

REGISTERED CROPS

- Alfalfa, seedling
- Beans, dry (pinto, black, great northern, red, pink, navy)
- Canola
- Carnations
- Coriander
- Cranberries
- Fenugreek
- Field Peas
- Highbush Blueberries
- Onions, dry
- Potatoes
- Soybeans
- Spinach
- Strawberries
- Sunflowers
- Sweet Potatoes

WEEDS CONTROLLED

Grassy Weeds	Leaf Stage	Application Rate
Foxtail (green, yellow), Wild Oats, Volunteer Cereals (wheat, barley, oats)	2–4	100 ml/ac*
Barnyard Grass, Fall Panicum, Proso Millet, Volunteer Corn, Volunteer Canarygrass, Witchgrass	2–6	
Crabgrass (smooth, large), Foxtail (green, yellow), Persian Darnel, Volunteer Cereals (wheat, barley, oats), Wild Oats, Quackgrass (suppression)		150 ml/ac
Quackgrass (control)		300 ml/ac

*ARROW ALL IN[®] applied at 100 ml/ac for the control of weeds listed in this section of the table should only be applied under the following conditions: good crop stand, early application (prior to tillering), light to moderate weed infestation, adequate moisture and fertility, absence of stress, good growing conditions. Do not apply to Volunteer Winter Cereals. If any one of the above is not present at the time of application, apply the 150 ml/ac rate of ARROW ALL IN[®].

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ARROW ALL IN®

HOW IT WORKS

The active ingredient is translocated from the treated foliage to the growing points of the leaves, shoots and roots. Leaf foliage will first change from green to yellowish, then purplish and finally brown. Newest leaf of affected plant pulls out easily in 3–5 days. Time required for complete control is normally 7–21 days following treatment, depending on growing conditions and crop competition.

CROP STAGING

- Most crops are tolerant at all stages, so target applications at the optimal weed stage.
- Always adhere to the pre-harvest interval for each crop.

REGISTERED AND SUPPORTED TANK MIXES†

- Glyphosate-Tolerant Soybeans: Glyphosate
- Soybeans, Edible Beans: DAVAI® 80 SL
- Canola: Lontrel™ XC or Muster®
- Clearfield® Canola only: PHANTOM® 240 SL
- LibertyLink® Canola only: ADAMA GLUFOSINATE 150 SL
- Field Peas: DAVAI® 80 SL, PHANTOM® 240 SL

† Refer to page 139 for PRD tank-mixing directives.

MIXING INSTRUCTIONS

1. Fill clean tank ½ full with water and agitation on.
2. Add the required amount of tank-mix partner.
3. Add ARROW ALL IN® and agitate.
4. OPTIONAL: For use of ARROW ALL IN® alone (not in a tank mixture), add the correct amount of adjuvant.
5. Complete filling the tank with water as agitation continues.
6. Agitate thoroughly after prolonged pauses.

*When mixing with glufosinate, first add ARROW ALL IN®, followed by glufosinate.

NOTE: If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).

PRE-HARVEST INTERVALS

- Highbush Blueberries, Spinach: 14 days
- Alfalfa (seedling), Cranberries, Fenugreek: 30 days
- Onions, dry: 45 days
- Canola, Chickpeas (desi, kabuli), Coriander, Dry Beans (pinto, black, great northern, red, pink, navy), Lentils, Potatoes: 60 days
- Sunflowers: 72 days
- Field Peas, Soybeans: 75 days
- Strawberry: 60 days
- Sweet Potato: 30 days



ARROW ALL IN[®]

ADJUVANT RATE

An optional additional adjuvant may be used under circumstances of heavy weed pressure or when environmental conditions (e.g., drought) are not ideal for weed control.

- 30% phosphate Ester surfactant @ 0.5% v/v
- Methylated seed oil (MSO) @ 0.5% v/v
- Non-ionic surfactant (NIS) @ 0.25% v/v

CROP ROTATIONS

No restrictions

GRAZING RESTRICTIONS

Do not cut treated crops for feed or graze until 60 days after application.

STORAGE

Do not freeze.

RE-ENTRY INTERVAL (REI)

12 hours

QUICK TIPS:

Most effective control is achieved when application is made prior to tillering when annual grasses are small and actively growing.



BADGE®

Get proven control of almost 30 broadleaf weeds in cereals and corn with easy-to-use tank-mix options for one-shot weed control.

ACTIVE INGREDIENT

Bromoxynil 225 g/L and
MCPA 2 EH Ester 600 225 g/L = EC

APPLICATION RATES

Rate: 500 ml/ac

PACKAGING & ACRES TREATED

Case: 2 x 10 L jugs

Drum: 120 L

Tote: 450 L

Acres Treated: 20 ac/jug; 240 ac/drum; 900 ac/tote

WATER VOLUME

Ground: Cereals: 20–40 L/ac (5–10 US gal/ac)

Corn: 80–120 L/ac (20–30 US gal/ac)

Forages: 60 L/ac (15 US gal/ac)

Aerial: 8–20 L/ac (2–5 US gal/ac)

RAINFASTNESS

1 hour



REGISTERED CROPS

- Barley
- Corn
- Fall Rye
- Oats
- Wheat (spring, winter)

WEEDS CONTROLLED

- American Nightshade
- Ball Mustard
- Bluebur
- Canada Thistle¹
- Cocklebur
- Common Buckwheat
- Common Groundsel
- Common Ragweed
- Cow Cockle²
- Flixweed
- Green Smartweed
- Kochia³
- Lady's Thumb
- Lamb's Quarters
- Night-Flowering Catchfly
- Pale Smartweed
- Perennial Sow Thistle¹
- Redroot Pigweed
- Russian Thistle³
- Scentless Chamomile⁴
- Shepherd's Purse
- Stinkweed
- Tartary Buckwheat
- Velvetleaf⁵
- Volunteer Canola (all types)
- Volunteer Sunflower
- Wild Buckwheat
- Wild Mustard
- Wild Tomato
- Wormseed Mustard

¹ Top growth control

² Up to 4-leaf stage

³ When sprayed before plants are 2 inches high

⁴ Spring annual only

⁵ When sprayed before plants are 3 inches high

BADGE®

HOW IT WORKS

A combination of systemic and contact activity with weeds yellowing within 2–4 days and exhibiting abnormal growth (twisting and cupping of leaves) in 2–10 days.

CROP STAGING

Crop	Timing
Barley, Oats, Spring Wheat	2-leaf to early flag
Corn	4–6 leaf
Fall Rye	When growth commences in spring to early flag leaf
Timothy (established for seed production)	Prior to shot blade in the seed production year
Winter wheat (includes underseeded with red clover)	2–4 leaf stage in the fall or after growth resumes up to early flag leaf

REGISTERED AND SUPPORTED TANK MIXES†

- **Corn:** Atrazine
- **Oats:** MCPA ESTER 600
- **Spring Wheat and Barley:** BISON® 400 L, MCPA ESTER 600, Refine® SG
- **Winter Wheat:** MCPA ESTER 600, Refine® SG

† Refer to page 139 for PRD tank-mixing directives.

MIXING INSTRUCTIONS

1. Fill sprayer tank ½ full of water.
2. Start sprayer tank agitation.
3. Add the required amount of BADGE®.
4. If necessary, add any required adjuvants or surfactants for tank-mix partners.
5. Complete filling the tank with water as agitation continues.

NOTE: If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).

CROP ROTATIONS

No re-cropping restrictions the year after treatment

STORAGE

Do not freeze.

PRE-HARVEST INTERVAL

30 days for feed. Refer to tank-mix partner label.

GRAZING RESTRICTIONS

Do not graze treated grain or established timothy crops or cut for feed within 30 days of application.

RE-ENTRY INTERVAL (REI)

24 hours

QUICK TIPS:

BADGE® herbicide is well known for being gentle on the crop. Avoid spraying if temperatures are above 25°C.

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BISON® 400 L

Get a wide window of application and excellent control of annual grasses in cereals and seedling forage grasses grown for seed.



ACTIVE INGREDIENT

Tralkoxydim 400 g/L = SC

APPLICATION RATES

Rate: 200 ml/ac

PACKAGING & ACRES TREATED

One case includes:

- 1 x 8 L jug of BISON® 400 L
- 1 x 8 L jug of Addit® adjuvant

Acres Treated: 40 ac/case

WATER VOLUME

Ground: 20–40 L/ac (5–10 US gal/ac)

Aerial: 12–18 L/ac (3–5 US gal/ac)

RAINFASTNESS

1 hour

REGISTERED CROPS

Field crops:

- Barley
- Rye (spring, winter)
- Triticale
- Wheat (spring, winter)

Cereal crops underseeded to forage legumes:

- Alfalfa
- Birdsfoot Trefoil
- Clovers
- Sainfoin

WEEDS CONTROLLED

Weed	Stage
Wild Oats	1–6 leaf

HOW IT WORKS

A systemic post-emergent herbicide that translocates the active ingredient to the growing point. Yellowing of the growing point in 1–3 weeks. The newest leaf pulls out easily in 3–5 days.

CROP STAGING

Generally there are no restrictions. Always read the label for tank-mixing instructions and additional restrictions.



BISON® 400 L

REGISTERED AND SUPPORTED TANK MIXES†

Do not apply any broadleaf herbicide tank mixes to underseeded forage legumes.

Herbicides:

- 2,4-D ESTER 700
- Attain®
- BADGE®
- BROMOTRIL® 240 EC
- Bromoxynil + 2,4-D ESTER 700
- Dichlorprop + 2,4-D ESTER 700
- ESTEEM ALL IN®
- FORCEFIGHTER ALL IN®
- Infinity®
- Lontrel™ XC
- MCPA ESTER 600
- Pixxaro™
- Prominex™
- RUSH 24 ALL IN®
- Trophy®

Insecticides:

- Decis®
- SILENCER® 120 EC

Fungicides:

- BUMPER® 432 EC

† Refer to page 139 for PRD tank-mixing directives.

MIXING INSTRUCTIONS

1. Begin to fill spray tank or pre-mix tank with clean water, and engage agitator.
2. Agitation must be continued throughout the entire mixing and spraying procedure.
3. When the spray tank or pre-mix tank is $\frac{3}{4}$ full of water, add BISON® 400 L. If more than one (1) case of BISON® 400 L is to be used, add the BISON® 400 L from all cases prior to adding tank-mixed products or Addit® adjuvant.
4. Add Addit® adjuvant.
5. Complete filling the tank with water as agitation continues.

NOTE: If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).

ADJUVANT RATE

Addit® adjuvant @ 0.5% v/v

CROP ROTATIONS

Do not replant treated areas to tame oats or corn for at least 4 weeks after application.

PRE-HARVEST INTERVAL

60 days

RE-ENTRY INTERVAL (REI)

12 hours

GRAZING RESTRICTIONS

- Immature cereal crops may be grazed or cut for hay 16 days after treatment.
- Mature straw may be fed to livestock.
- Do not feed or graze underseeded forage crops in the year of treatment.

STORAGE

- Shake well before use.
- Do not freeze.

QUICK TIPS:

For optimal crop safety, spray in warm weather with moist soil. Avoid stressful growing conditions, and avoid applying within 2–3 days of temperatures at 4°C or below.

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CAZADO™ NEW

The ONLY solution that provides true dual-mode of action control of Wild Oats, giving wheat growers their first ever in-crop opportunity to proactively protect against grassy weed resistance.



ACTIVE INGREDIENT

Pinoxaden 100 g/L +
Thiencarbazone-methyl 8.33 g/L = OD

APPLICATION RATES

Rate: 243 ml/ac

PACKAGING & ACRES TREATED

Case: 2 × 9.72 L jug

Drum: 77.8 L with built-in paddle mixer

Acres treated: 40 ac/jug; 320 ac/drum with built-in paddle mixer

WATER VOLUME

Ground: 20–40 L/ac

(5–10 US gal/ac)

Aerial: 12 L/ac (3 US gal/ac)

RAINFASTNESS

1 hour

REGISTERED CROPS

Crop	Stage
Spring Wheat	1 to 6 leaves on main stem, plus 3 tillers but prior to jointing (presence of first node)
Winter Wheat	Apply either in the fall or spring when the majority of plants have one leaf to full tillering, but prior to jointing (presence of first node)

WEEDS CONTROLLED

Unless otherwise noted below, apply to young and actively growing weeds.

Grassy Weeds 1–6 Leaf:

- Barnyard Grass
- Green Foxtail
- Persian Darnel⁵
- Proso Millet
- Volunteer Oats
- Wild Oats¹
- Yellow Foxtail

Broadleaf Weeds 1–6 Leaf:

- Cleavers
- Hemp-Nettle
- Lamb's-Quarters⁵
- Pale Smartweed
- Redroot Pigweed
- Round-Leaved Mallow⁵
- Shepherd's-Purse
- Stinkweed
- Volunteer Canola²
- Wild Buckwheat
- Wild Mustard

⁵Suppression only.

¹Including Wild Oat biotypes resistant to Group 1 or Group 2 herbicides. For better resistant populations control, a weed stage of 1 to 6 leaves, prior to 3rd tiller is recommended.

²Non ALS-tolerant.

CAZADO™ will not control weeds resistant to both Group 1 and Group 2 herbicides. CAZADO™ will not control Group 2 (ALS resistant) broadleaf weeds.

CAZADO™ NEW

HOW IT WORKS

CAZADO™ is absorbed by the leaves and is rapidly translocated to the growing points of leaves and stems. Actively growing susceptible grasses stop growing within 48 hours of treatment.

MIXING INSTRUCTIONS

1. Fill the spray tank $\frac{1}{4}$ to $\frac{1}{2}$ full with clean water and begin agitation or bypass.
2. Add any water conditioners, if using.
3. Add tank mix partners, if desired.
4. Add the appropriate rate of CAZADO™, directly to the spray tank. Maintain sufficient agitation during both mixing and application.
5. Add any adjuvants, if using.
6. Fill the spray tank with balance of water required.
7. Maintain sufficient agitation during both mixing and application of CAZADO™.

CAZADO™ is an OD formulation that is oil-based and behaves similar to EC's; as such include in the mixing order as you would an EC formulation.

NOTE: If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).

ADJUVANT RATE

Under challenging conditions (heavy weed pressure, stressed environmental conditions, etc) an adjuvant may be added to enhance grassy weed control:

- MSO or COC (ex Cohere or Addit at 0.5% v/v Spring Wheat only)

Do not use additional adjuvant if tank mix partner does not support.

CROP ROTATIONS

Alfalfa, Spring Barley, Canola, Field Corn, Dry Bean, Flax (including low linolenic acid varieties), Mustard, Spring Oats, Field Peas, Soybeans, Sunflowers, Timothy, Wheat: 10 months

PRE-HARVEST INTERVALS

- Spring Wheat for Grain or Straw: 60 days
- Winter Wheat for Grain or Straw: 72 days

STORAGE

Do not freeze. Shake jugs well before using. Mix drums utilizing attached drill adapter.

GRAZING RESTRICTIONS

DO NOT graze the treated crops or cut for forage within 7 days or cut for hay within 30 days of application.

QUICK TIPS:

Do not spray CAZADO™ within three days of temperature that is 3° C or less prior to or following the temperature. Do not spray if time between seeding and spraying exceeds 35 days (as drought hastens crop development) – applicable to all applications.



DAVAI® 80 SL

Broadleaf and grassy weed control in a convenient package that allows for flexible tank-mix options in soybeans, dry beans and field peas.



ACTIVE INGREDIENT

Imazamox 80 g/L = SL

APPLICATION RATES

Rate: 100 ml/ac

PACKAGING & ACRES TREATED

Case: 2 × 8 L jugs

Acres treated: 80 ac/jug

WATER VOLUME

Ground: 40 L/ac (10 US gal/ac)

Aerial: Do not apply by air.

RAINFASTNESS

3 hours

REGISTERED CROPS

• Dry Beans

• Field Peas

• Soybeans

WEEDS CONTROLLED AND APPLICATION TIMING

Unless otherwise noted below, apply to young and actively growing weeds.

Broadleaf Weeds:

Cotyledon-4 Leaf:

- Cleavers⁵
- Cow Cockle
- Flixweed
- Green Smartweed
- Lamb's Quarters
- Redroot Pigweed
- Shepherd's Purse
- Stinkweed
- Stork's Bill
- Volunteer Canola²
- Wild Buckwheat⁵
- Wild Mustard

Grasses:

1-4 True Leaf:

- Barnyard Grass
- Green Foxtail¹
- Japanese Bromegrass⁵
- Persian Darnel
- Volunteer Cereals (barley, oats, wheat)
- Volunteer Canary Seed
- Wild Oats¹
- Yellow Foxtail

⁵Suppression only

¹Including Group 1-resistant weeds. DAVAI® 80 SL will NOT control weed biotypes that are multiple-resistant to both Group-1 and Group-2 herbicides.

²Non imidazolinone-tolerant varieties

DAVAI® 80 SL

HOW IT WORKS

DAVAI® 80 SL is readily absorbed through both leaf and root uptake, and it is translocated in the plant to inhibit amino acid production and cell division. Plant growth is inhibited, and a few days after application, chlorosis and terminal bud injury become evident. Leaves and stems become yellow and purple, and root growth may be inhibited. Crop competition is quickly reduced, although complete plant death is relatively slow.

CROP STAGING

- Dry Beans, Soybeans: Emergence to 3-expanded trifoliate leaves
- Field Peas: 1–6 true-leaf stage

REGISTERED AND SUPPORTED TANK MIXES†

- ARROW ALL IN®
- Basagran® Forté
- Broadloom®
- LEOPARD®
- PHANTOM® 240 SL

†Refer to page 139 for PRD tank-mixing directives.

MIXING INSTRUCTIONS

1. Fill sprayer tank ½ full of water.
2. Start sprayer tank agitation.
3. Add the required amount of DAVAI® 80 SL.
4. Add any required adjuvants or surfactants for tank-mix partners.
5. Complete filling tank with water as agitation continues.

NOTE: If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).

ADJUVANT RATE

- Methylated Seed Oil (MSO) such as Merge®, NORAC MSO, Hasten NT Ultra® @ 0.50% v/v
- ADAMA Adjuvant 80, Agral® 90, Sentry™ @ 0.25% v/v

CROP ROTATIONS

(Can be seeded the following year)

- | | |
|---------------|--------------------------|
| • Barley | • Imidazolinone-Tolerant |
| • Canola | • Sunflowers |
| • Canary Seed | • Oats |
| • Corn | • Soybeans |
| • Field Peas | • Wheat (spring) |



DAVAI® 80 SL

PRE-HARVEST INTERVALS

- Field Peas: 60 days
- Dry Beans: 75 days
- Soybeans: 85 days

RE-ENTRY INTERVAL (REI)

12 hours

GRAZING RESTRICTIONS

- Field Peas: 30 days
- All other treated crops: Do not graze.

STORAGE

Do not freeze.

RE-CROPPING RESTRICTIONS

There are several factors that affect the re-cropping following an imidazolinone application. If you are planning to use DAVAI® 80 SL, DAVAI® A PLUS, DAVAI® Q PLUS, PYTHON®, or PHANTOM® 240 SL, please consult the re-cropping restrictions and guidelines on page 76.

QUICK TIPS:

Cool weather conditions or drought will delay herbicidal activity and if prolonged, may result in poor weed control. Use of DAVAI® 80 SL herbicide in hot, humid weather may result in temporary leaf yellowing, leaf flecking, bronzing or burning. The crop usually outgrows this condition within 10 days. When weeds are stressed due to drought, flooding, hot or prolonged cool temperatures (15° C or less), control can be reduced or delayed since weeds are not actively growing. Weeds escapes or regrowth may occur under prolonged stress conditions or low fertility. Do not make applications to weeds stressed longer than 20 days due to lack of moisture, as unsatisfactory control can result.



ESTEEM ALL IN®

Superior control of hard-to-kill broadleaf weeds like Thistles, Dandelions and Cleavers, in a convenient formulation with flexible use rates in cereal crops!



ACTIVE INGREDIENT

Fluroxypyr 59.7 g/L, Clopyralid 40 g/L + MCPA 2 EH Ester 240.5 g/L = EC

APPLICATION RATES

Low rate: 730 ml/ac

High rate: 970 ml/ac

PACKAGING & ACRES TREATED

Case: 2 × 10.93 L jugs

Drum: 116.5 L

Acres Treated: 11–15 ac/jug; 120–160 ac/drum

WATER VOLUME

Ground: minimum 20–40 L/ac

(5–10 US gal/ac)

Aerial: 12–20 L/ac (3–5 US gal/ac)

RAINFASTNESS

4 hours

REGISTERED CROPS

- Barley
- Oats
- Wheat (spring, winter)

KEY WEEDS CONTROLLED*

At the low rate of 730 ml/ac:

- Burdock
- Canada Thistle (low infestations)
- Cleavers
- Cocklebur
- Field Horsetail (top growth)
- Flixweed
- Kochia
- Lamb's Quarters
- Plantain (top growth)
- Prickly Lettuce
- Ragweed
- Shepherd's Purse
- Stinkweed
- Stork's Bill
- Wild Buckwheat
- Wild Mustard
- Vetch

At the high rate of 970 ml/ac, the above weeds plus:

- Annual Sow Thistle
- Canada Thistle (medium to high infestations; season-long control)
- Chickweed
- Common Groundsel
- Dandelion (spring rosettes only)
- Hemp-Nettle
- Perennial Sow Thistle (season-long control)
- Redroot Pigweed
- Russian Pigweed
- Scentless Chamomile
- Smartweed
- Tartary Buckwheat
- Volunteer Canola

* For complete list of weeds controlled, refer to the label.

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ESTEEM ALL IN[®]

HOW IT WORKS

ESTEEM ALL IN[®] moves within the plant to control exposed and underground plant tissues. It mimics naturally occurring plant hormones which control weeds by disrupting normal plant growth patterns. Symptoms of effect include epinasty (twisting of the stems) and swollen nodes.

MIXING INSTRUCTIONS

1. Fill sprayer tank ½ full of water.
2. Start sprayer tank agitation.
3. Add the required amount of ESTEEM ALL IN[®].
4. If necessary, add any required adjuvants or surfactants for tank-mix partners.
5. Complete filling tank with water.

NOTE: If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).

SUPPORTED TANK MIXES†

- BISON[®] 400 L
- Liquid Achieve[™] SC¹
- Puma[®] Advance
- Traxos[®]
- Varro[®]

¹ Tank mixes with Liquid Achieve[™] SC may cause temporary injury if applied before the 4-leaf stage, however, yield will not normally be affected.

† Refer to page 139 for PRD tank-mixing directives.

PRE-HARVEST INTERVALS

- Forage: 7 days
- Wheat, Barley, Oats: 60 days

ADJUVANT RATE

Adjuvant only required, if tank-mixing with Liquid Achieve[™] SC: Turbocharge[®] @ 0.5% v/v

CROP ROTATIONS

Fields previously treated with ESTEEM ALL IN[®] can be seeded to Wheat, Barley, Oats and Rye (not underseeded to forage legumes, clover or alfalfa), Canola, Field Peas, Flax, Forage Grasses, Mustard, or summer-fallowed.

For Field Peas a rainfall of 140 mm (5.5") between herbicide application and August 31 (in the year of application), as well as an annual precipitation greater than 175 mm (6.9") is required.

GRAZING RESTRICTIONS

- Do not cut or graze treated fields of Wheat, Barley or Oats within 7 days after application.
- Withdraw meat animals from treated fields at least 3 days before slaughter.

STORAGE

Do not freeze.

RE-ENTRY INTERVAL (REI)

12 hours

QUICK TIPS:

Flexible rates — choose what works best for you:

- **730 ml/ac:** standard weed pressure OR hard-to-control weeds;
- **970 ml/ac:** heavy weed pressure



FORCEFIGHTER ALL IN®

FORCEFIGHTER ALL IN® provides three active ingredients and two modes of action for post-emergent control of annual and perennial broadleaf weeds in wheat (spring) and barley.



ACTIVE INGREDIENT

Bromoxynil + Fluroxypyr + MCPA Ester = EC

APPLICATION RATES

Rate: 567 ml/ac

PACKAGING & ACRES TREATED

Case: 2 x 11.37 L jugs

Drum: 90.9 L

Tote: 455 L

Acres treated: 20 ac/jug; 160 ac/drum; 802 ac/tote

WATER VOLUME

Ground: 20–40 L/ac (5–10 US gal/ac)

Aerial: Do not apply by air.

RAINFASTNESS

1 hour

REGISTERED CROPS

• Barley

• Wheat (spring)

WEEDS CONTROLLED

Top growth control only:

- American Nightshade
- Canada Thistle

- Cocklebur
- Perennial Sow Thistle

Up to 4-leaf:

- Bluebur
- Cow Cockle
- Flixweed
- Lady's Thumb
- Night-Flowering Catchfly

- Redroot Pigweed
- Shepherd's Purse
- Smartweed (green, pale)
- Volunteer Canola
- Volunteer Sunflower

Up to 8-leaf:

- Common Groundsel
- Lamb's Quarters
- Stinkweed

- Wild Buckwheat
- Wild Mustard¹
- Wormseed Mustard

Other:

- Cleavers (up to 4 whorls)¹
- Kochia (up to 5 cm)²

- Russian Thistle (up to 5 cm)
- Wild Radish

¹ Including Group 2-resistant biotypes

² Including Group 2- and glyphosate-resistant biotypes

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FORCEFIGHTER ALL IN®

CROP STAGING

2-leaf to early flag leaf

HOW IT WORKS

Quickly causes plants to stop growing. This convenient all in one formulation controls a wide range of weeds, including glyphosate-resistant and Group 2-resistant Kochia, Group 2-resistant Cleavers and Group 2-resistant Wild Mustard.

MIXING INSTRUCTIONS

1. Fill sprayer tank ½ full of water.
2. Start sprayer tank agitation.
3. Add the required amount of FORCEFIGHTER ALL IN®.
4. If necessary, add any required adjuvants or surfactants for tank-mix partners.
5. Complete filling tank with water.

NOTE: If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).

REGISTERED AND SUPPORTED TANK MIXES†

Spring Wheat:

- BISON® 400 L
- Traxos® Herbicide

Barley:

- BISON® 400 L

†Refer to page 139 for PRD tank-mixing directives.

CROP ROTATIONS

Can be seeded the following year to:

- Barley
- Canola
- Flax
- Forage Grasses
- Lentils
- Oats
- Peas
- Rye
- Wheat

Or fields can be summerfallowed.

STORAGE

Do not freeze.

RE-ENTRY INTERVAL (REI)

24 hours

PRE-HARVEST INTERVAL

60 days

STORAGE

Do not freeze.

GRAZING RESTRICTIONS

30 days

QUICK TIPS:

Do not apply before the 2-leaf stage as crop injury may occur.

Use 40 L/ac application volume when there is a heavy canopy or when most weeds are at an advanced stage of growth.

Activity is influenced by weather conditions. Optimal application temperature is 12–24° C. Avoid application 3 days before or after frost.



ADAMA GLUFOSINATE 150 SL

Reliable formulation for post-emergent control of almost 30 broadleaf and grassy weeds for use in glufosinate-ammonium-tolerant canola and soybeans.



ACTIVE INGREDIENT

Glufosinate ammonium 150 g/L = SL

APPLICATION RATES

Rate: 0.8–1.62 L/ac

PACKAGING & ACRES TREATED

Case: 2 x 13.5 L jugs

Drum: 108 L

Tote: 432 L

Tote Max: 1000 L

Acres Treated: 8–17 ac/jug; 67–135 ac/drum; 267–540 ac/tote;
617–1250 ac/tote max

WATER VOLUME

Ground: 45 L/ac (12 US gal/ac)

Aerial: 23 L/ac (6 US gal/ac)

RAINFASTNESS

4 hours

REGISTERED CROPS

- Glufosinate-Ammonium-Tolerant Canola
- Glufosinate-Ammonium-Tolerant Soybeans

Crop	Timing	Recommended Rate
Glufosinate-Tolerant Canola	Apply from the cotyledon stage up until, but prior to, the early bolting stage of canola.	One (1) pass: 1.35–1.62 L/ac Two (2) passes: 1.35 L/ac followed by 1.35 L/ac (and up to 1.62 L/ac) OR 1.62 L/ac followed by 1.35 L/ac <i>NOTE: Do not apply more than a total of 2.97 L/ac in one season.</i>
Glufosinate-Tolerant Soybeans	Apply from the cotyledon to the flowering stage of the crop.	0.8–1.35 L/ac

NOTE: Please refer to label for additional rates.

50  Always read and follow pesticide label directions.

GO TO:

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ADAMA GLUFOSINATE 150 SL

WEEDS CONTROLLED

Broadleaf Weeds:

- Canada Thistle¹
- Cleavers
- Common Chickweed
- Cow Cockle
- Dandelion
- Flixweed
- Hemp-Nettle
- Kochia
- Lady's Thumb
- Lamb's Quarters
- Perennial Sow Thistle
- Redroot Pigweed
- Round-Leaved Mallow
- Russian Thistle
- Scentless Chamomile
- Shepherd's Purse
- Smartweed
- Stinkweed
- Stork's Bill
- Volunteer Flax
- Wild Buckwheat
- Wild Mustard

Grasses:

- Barnyard Grass
- Green Foxtail
- Quackgrass²
- Volunteer Barley⁵
- Volunteer Wheat
- Wild Oats

⁵ Suppression only

¹ Top growth suppression only

² Season-long control for heavy populations at 1.62 L/ac

HOW IT WORKS

ADAMA GLUFOSINATE 150 SL is a non-selective herbicide that provides control of a broad spectrum of grassy and broadleaf weeds in canola and soybean varieties and hybrids that are specially developed to be tolerant to glufosinate ammonium.

ADAMA GLUFOSINATE 150 SL is a contact herbicide with limited translocation within the plant. Control is best when weeds are actively growing and not under stress.

CROP STAGING

- Pre-plant, Post-harvest, Summerfallow

REGISTERED AND SUPPORTED TANK MIXES[†]

- Facet[®] L
- ARROW ALL IN[®]
- LEOPARD[®]

[†] Refer to page 139 for PRD tank-mixing directives.

SUPPORTED ADJUVANTS

- Agral 90[®]
- Not all tank mixes require an adjuvant, see label for details.



ADAMA GLUFOSINATE 150 SL

MIXING INSTRUCTIONS

1. Fill the tank $\frac{3}{4}$ full with clean water.
2. Start sprayer tank agitation.
3. Add the required amount of ADAMA GLUFOSINATE 150 SL.
4. If necessary, add any required adjuvants or surfactants for tank-mix partners.
5. Complete filling tank with water.

NOTE: If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).

CROP ROTATIONS

- Buckwheat, Barley, Millet, Oats, Rye, Sorghum, Triticale: 70 days
- All other crops (except alfalfa, canola, carrots, dry common beans not grown for seed, field corn, lettuce, onion, potatoes, and soybeans): 120 days

PRE-HARVEST INTERVAL

Canola: 60 days

Soybeans: 70 days

GRAZING RESTRICTIONS

Canola:

- Grain and meal from treated crop can be fed to livestock.
- Do not graze the treated crop or cut for hay; sufficient data is not available to support such use.

Soybeans: 20 days

RE-ENTRY INTERVAL (REI)

24 hours

STORAGE

Do not freeze.

QUICK TIPS:

ADAMA GLUFOSINATE 150 SL can be weak on some annual grasses. If these species are not adequately controlled with a residual herbicide, it may be advantageous to include a grass herbicide such as LEOPARD® or ARROW ALL IN® with the post-emergent glufosinate application.

ADAMA GLUFOSINATE 150 SL activity is maximized in warm, sunny weather.

ADAMA GLUFOSINATE 150 SL, as with all ADAMA products, is fully supported by a sales, service and agronomic teams across all Eastern Canadian provinces.



INVOLVE® 50 WDG

Pre-plant or post-harvest Group 2 herbicide for control of the toughest broadleaf weeds.



ACTIVE INGREDIENT

50% Tribenuron-methyl = WDG

APPLICATION RATES

Row Crops and Dry Beans

Rate: 6 g/ac

Lowbush Blueberries only

Rate: 24 g/ac

PACKAGING & ACRES TREATED

Case: 10 x 480 g bottles/case

Acres Treated (row crops and dry beans): 80 ac/bottle; 800 ac/case

Acres Treated (lowbush blueberries only): 18 ac/bottle; 185 ac/case

WATER VOLUME

Ground:

- Row Crops/Dry Beans:
22–44 L/ac (5–12 US gal/ac)
- Lowbush Blueberries:
60–100 L/ac (15–26 US gal/ac)

Aerial: Do not apply by air.

RAINFASTNESS

4–6 hours

REGISTERED CROPS

- Alfalfa
- Alsike Clover
- Blueberries (lowbush)
- Dry beans
- Faba Beans
- Field Peas
- Oats
- Red Clover
- Soybeans
- Spring Barley
- Timothy
- Wheat (spring, winter)

WEEDS CONTROLLED (ROW CROPS/DRY BEANS ONLY)

INVOLVE® 50 WDG plus 0.5 REL/ac glyphosate equivalent will control the following weeds:

Broadleaf Weeds:

- Canada Fleabane¹
- Canada Thistle⁵
- Common Ragweed
- Cow Cockle
- Dandelion
- Flixweed
- Hemp-Nettle
- Kochia
- Lamb's Quarters
- Lady's Thumb
- Narrow-Leaved Hawk's Beard
- Redroot Pigweed
- Russian Thistle
- Scentless Chamomile⁵
- Stinkweed
- Volunteer Canola²
- White Cockle⁵
- Wild Mustard
- Wild Buckwheat

Grasses:

- Downy Brome
- Foxtail (giant, green)
- Persian Darnel
- Volunteer Barley
- Volunteer Wheat
- Wild Oats

⁵ Suppression only

¹ Excluding Group 2- and Group 9-resistant Fleabane

² Including glyphosate-tolerant varieties

INVOLVE® 50 WDG

CROP STAGING (ROW CROPS/DRY BEANS ONLY)

Pre-plant, Post-harvest, Summerfallow.

WEEDS CONTROLLED AND TIMING (LOWBUSH BLUEBERRIES)

INVOLVE® 50 WDG plus AGRAL® 90 @ 0.2 % v/v will control the following weeds in lowbush blueberries.

Weed	Timing	Year
Bracken Fern Yellow Loosestrife	Use as a spot treatment in mid-summer	Sprout
Speckled Alder Wild Rose	Use as a spot treatment in early fall	Sprout
Bunchberry	Post-harvest	Fruiting
	Spring*	Sprout

* Make only one application per crop cycle (2 or 3 years) in the sprout year.

HOW IT WORKS

INVOLVE® 50 WDG inhibits the production of the ALS enzyme, quickly causing plants to stop growing and become discoloured (red, yellow, purple) at the growing point and spreading to the entire plant within 1–3 weeks.

REGISTERED AND SUPPORTED TANK MIXES (ROW CROPS/DRY BEANS ONLY)†

- 2,4-D ESTER 700
- AIM® EC
- Authority® 480
- Dicamba products
- Glyphosate

† Refer to page 139 for PRD tank-mixing directives.

SUPPORTED ADJUVANTS AND RATES

- Agral 90® @ 0.2–0.35% v/v
- Not all tank mixes require an adjuvant, see label for rates and details.



INVOLVE® 50 WDG

MIXING INSTRUCTIONS

1. Fill clean spray tank $\frac{1}{2}$ full of clean water, and start agitation.
2. Add the required amount of INVOLVE® 50 WDG and agitate until product is completely dispersed.
3. Add the required amount of glyphosate.
4. Add the required amount of surfactant, then fill tank with remaining water with agitation on.
5. For repeat tank loads, empty the spray tank completely to avoid INVOLVE® 50 WDG from not dispersing or add to tank as a pre-slurry in 5–10 L of water.

NOTE: If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).

CROP ROTATIONS

- Alfalfa, Bean Crops (including dry beans, faba beans, field peas and soybeans), Oats, Red Clover or Alsike Clover, Timothy, Spring Barley, Spring Wheat and Winter Wheat: 24 hours after application
- Canola and Lentils: 60 days after application

Post-harvest application in the fall may be summerfallowed or seeded in the spring to:

- Alfalfa, Canola, Field Corn or Bean Crops (including dry beans, faba beans, field peas and soybeans), Lentils, Red Clover or Alsike Clover, Spring Wheat, Spring Barley, Oats and Timothy.

STORAGE

May be stored at any temperature.

RE-ENTRY INTERVAL (REI)

12 hours

QUICK TIPS:

Degree of control and duration of effect depend on weed sensitivity, weed size, spray coverage and growing conditions. Activity of the herbicide mixture may be delayed by cold, dry conditions after application.

Injury to pulse crops may occur on coarse-textured soils, low in organic matter (less than 3%), or in fields with variable soils, gravelly areas, sandy areas or eroded knolls. Avoid planting pulse crops in soils containing more than 50% sand.



LEOPARD®

A powerful grass control solution designed to tackle tough grassy weeds like Quackgrass, Barnyard Grass, and Volunteer Corn in soybeans, dry beans, and a wide range of specialty crops. Fast-acting, convenient, and effective control.



ACTIVE INGREDIENT

Quizalofop-P-ethyl 100 g/L = EC

APPLICATION RATES

Rate: 150–290 ml/ac
(standard rate: 195 ml/ac)

PACKAGING & ACRES TREATED

Case: 2 x 7.8 L jugs

Drum: 93.6 L

Tote: 487.5 L

Acres Treated: 30–50 ac/jug (standard rate: 40 ac/jug)
480 ac/drum;
2500 ac/tote

WATER VOLUME

Ground: 40 L/ac (10 US gal/ac)

Aerial: 10 L/ac (2.5 US gal/ac)

RAINFASTNESS

Avoid application when heavy rain is forecast.

REGISTERED CROPS

- Alfalfa, seed
- Beans (dry & snap)
- Canola
- Chickpeas
- Cucurbit Vegetables
- Lentils
- Lima, Adzuki & Mung Beans (Ontario)
- Peas (field & processing)
- Rutabagas (Ontario & Quebec)
- Soybeans
- Sugar Beets

WEEDS CONTROLLED

Key Weeds Controlled by LEOPARD®

GRASS SPECIES	LEAF STAGE	RATE
Green Foxtail, Volunteer Cereals (wheat, barley, oats)	2–early tillering	150 ml/ac
Wild Oats	1–5	
Volunteer Corn	2–6	
Barnyard Grass, Fall Panicum, Yellow Foxtail, Proso Millet, Witchgrass	2–early tillering	195 ml/ac
Wild Oats	1–5 + 2 tillers	
Downy Brome, Japanese Brome	2–5	
Foxtail Barley	2–4 + 3 tillers	
Quackgrass (suppression)	2–6	
Quackgrass (control)	2–6	290 ml/ac

56 Always read and follow pesticide label directions.

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LEOPARD®

HOW IT WORKS

LEOPARD® is a selective post-emergent herbicide for the control of annual and perennial grasses. LEOPARD® is a systemic herbicide which is rapidly absorbed and readily translocated for the treated foliage to the root systems and growing points of the plant. Treated plants show a reduction in growth and a loss of competitiveness. An early yellowing and browning of the younger plant tissues is followed by a progressive collapse of the remaining foliage. These symptoms will generally be observed in 1–3 weeks depending on the grass species treated and the environmental conditions. This product does not control sedges or broadleaf weeds.

CROP STAGING

- Most crops are tolerant at all stages, so target applications at the optimal weed stage.
- Always adhere to the pre-harvest interval for each crop.

REGISTERED AND SUPPORTED TANK MIXES†

- Basagran®
- DAVAI® 80 SL
- ADAMA GLUFOSINATE 150 SL
- Glyphosate
- PHANTOM® 240 SL
- PYTHON®

† Refer to page 139 for PRD tank-mixing directives.

MIXING INSTRUCTIONS

1. Thoroughly clean the sprayer by flushing the system with water containing detergent.
2. Fill clean spray tank ½ full with water. Start agitation.
3. If tank-mixing LEOPARD® with another pesticide, add tank-mix partner followed by the adjuvant.
4. Add the rest of the required water to the tank with agitation on. Mix well before applying to the crop.

On repeat tank loads, ensure that the amount of spray solution left in the tank from the previous load is less than 10% of volume about to be mixed.

Do not mix, load or clean spray equipment where there is a potential to contaminate wells or aquatic systems.

When mixing with Glufosinate:

Glufosinate + LEOPARD® + Surfactant

When mixing with Glyphosate:

LEOPARD® + Glyphosate + Surfactant

NOTE: If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).



LEOPARD®

ADJUVANT RATES

LEOPARD® is not packaged with, but requires, an adjuvant such as:

- Merge® @ 0.5–1% v/v
- LI 700® @ 0.25–0.5% v/v
- Liberate™ adjuvant @ 0.5% v/v
- Other non-ionic surfactants (NIS) or methylated seed oil (MSO) adjuvants

CROP ROTATIONS

No restrictions

PRE-HARVEST INTERVAL

- Beans (dry and snap), Cucurbits, Rutabagas: 30 days
- Sugar Beets: 60–80 days
- Canola: 64 days
- Peas, Small Red Beans: 65 days
- Soybeans: 80 days

RE-ENTRY INTERVAL (REI)

12 hours

GRAZING RESTRICTIONS

Do not cut treated crops for hay.

STORAGE

Do not freeze.

QUICK TIPS:

LEOPARD® is safe on the crop at all stages. Rates are dependent on weed stages.

Use the higher adjuvant rate when targeting Quackgrass, or when conditions are not conducive to good growth.



MCPA ESTER 600

Reliable post-emergent control of broadleaf weeds and great tank-mix flexibility in wheat, barley, rye, oats, and pasture areas.



ACTIVE INGREDIENT

MCPA 2 EH Ester 600 g/L = EC

APPLICATION RATES

Rate: 285–425 ml/ac

PACKAGING & ACRES TREATED

Case: 2 × 10 L jugs

Drum: 116.4 L

Tote: 500 L

Acres Treated: 24–35 ac/jug; 270–404 ac/drum; 1250–1750 ac/tote

WATER VOLUME

Ground: 37–75 L/ac

(10–20 US gal/ac)

Aerial: 11 L/ac (3 US gal/ac)*

* Please refer to label as aerial application is crop-specific.

RAINFASTNESS

Avoid applying when rain is forecast.

REGISTERED CROPS

Crop	Timing ¹	Rate
Oats (not underseeded with legumes)	From the 1-leaf expanded to the early flag-leaf stage	Up to 365 ml/ac
Spring Wheat, Barley, Rye	From the 3-leaf expanded to the early flag-leaf stage. From milk stage to maturity	Up to 425 ml/ac
Winter Wheat, Fall Rye	In spring, from full tillering to the shot blade stage Do not apply during and after the flag-leaf stage. Do not apply to seedling winter cereals in the fall. GROUND APPLICATION ONLY.	

¹ Do not apply more than one treatment per year

MCPA ESTER 600

WEEDS CONTROLLED

Susceptible weeds²:

- Annual Sunflower
- Burdock⁴
- Cocklebur
- Flixweed¹
- Lamb's Quarters
- Mustard (except dog and tansy)
- Plantain
- Prickly Lettuce
- Ragweed
- Russian Pigweed¹
- Shepherd's Purse¹
- Stinkweed
- Vetch
- Wild Radish

Harder-to-control weeds³:

- Annual Sow Thistle
- Biennial Wormwood
- Canada Thistle¹
- Corn Spurry¹
- Curled Dock
- Dandelion
- Dog Mustard
- Field Bindweed¹
- Field Horsetail¹
- Field Peppergrass
- Goat's Beard
- Hairy Galinsoga
- Hedge Bindweed¹
- Hemp-Nettle⁴
- Kochia
- Lady's Thumb¹
- Leafy Spurge¹
- Oak-Leaved Goosefoot
- Perennial Sow Thistle¹
- Purslane
- Redroot Pigweed
- Russian Knapweed¹
- Russian Thistle
- Smartweed¹
- Sweet Clover⁵
- Tansy Mustard
- Tartary Buckwheat

¹ Use highest listed rate.

² Small seedlings (2–4 leaf), growing rapidly, good growing conditions: 235 ml/ac
Large weeds, dry or cold weather, heavy infestations: 365 ml/ac; Susceptibility decreases with age.

³ Small seedlings (2–4 leaf), growing rapidly, good growing conditions: 425 ml/ac
Large weeds, dry or cold weather, heavy infestations: 610 ml/ac; Susceptibility decreases with age.

⁴ Before 4-leaf stage

⁵ Seedlings

HOW IT WORKS

Systemic post-emergence phenoxy herbicide that acts as a plant growth regulator to control broadleaf weeds by stimulating nucleic acid and protein synthesis, which impacts the cell division and respiration causing malformed leaves, stems and roots.

CROP STAGING

- Most crops are tolerant at all stages, so target applications at the optimal weed stage.
- Always adhere to the pre-harvest interval for each crop.

REGISTERED AND SUPPORTED TANK MIXES[†]

Herbicides:

- BADGE®
- Barricade® SG
- BISON® 400 L
- BROMOTRIL® 240 EC

Fungicides:

- BUMPER® 432 EC

[†] Refer to page 139 for PRD tank-mixing directives.



MCPA ESTER 600

MIXING INSTRUCTIONS

1. Fill sprayer tank $\frac{1}{2}$ full of water.
2. Start sprayer tank agitation.
3. Add the required amount of ADAMA MCPA ESTER 600.
4. If necessary, add any required adjuvants or surfactants for tank-mix partners.
5. Complete filling tank with water with agitation on.

NOTE: If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).

CROP ROTATIONS

No restrictions

PRE-HARVEST INTERVAL

7 days

RE-ENTRY INTERVAL (REI)

12 hours

GRAZING RESTRICTIONS

7 days

STORAGE

May be stored at any temperature.

QUICK TIPS:

If product is exposed to temperatures below -20°C , it should be warmed to at least 5°C and mixed thoroughly before using.

Always read and follow registered product label instructions. It is an offence under the Pest Control Products Act to use this product in a way that is inconsistent with the directions on the label.



OXALIS®

NEW

An effective resistance management tank mix partner, OXALIS® is a pre-plant soil applied herbicide that gives extended control of key broadleaf weeds prior to their emergence.



ACTIVE INGREDIENT

Flumioxazin 480 g/L = SC

APPLICATION RATES

Rate: 60–90 ml/ac

PACKAGING & ACRES TREATED

Case: 2 x 4.8 L

Acres treated: 106–160 acres/case

WATER VOLUME

Ground: 40–120 L/ac

(10–30 US gal/ac)

Aerial: Do not apply by air.

REGISTERED CROPS

• Soybeans

• Field Corn

WEEDS CONTROLLED

- Canada Fleabane
- Common Lamb's-Quarters
- Common Ragweed
- Dandelion
- Eastern Black Nightshade
- Green Foxtail¹
- Green Pigweed
- Hairy Nightshade
- Redroot Pigweed

¹Suppression only.

WEEDS STAGING

- When weeds are already emerged, apply OXALIS® as a tank mix with a glyphosate product at 360–485 g a.e./ac.

HOW IT WORKS

OXALIS® controls weeds by inhibiting protoporphyrinogen oxidase, an essential enzyme required by plants for chlorophyll biosynthesis. Seedling weeds are controlled pre-emergence when exposed to sunlight following contact with the soil applied herbicide.

CROP STAGING

- Field Corn: Apply prior to weed emergence between 7 and 30 days prior to planting field corn into no-till or minimum tillage fields.
- Soybeans: Apply prior to planting or within 3 days after planting and prior to soybean emergence.

CROP	SOIL TYPE ¹	RATE
Field Corn, Soybeans	Coarse- textured, with <5% organic matter	60 ml/ac
	Medium- and fine-textured, with <5% organic matter	90 ml/ac

¹Do not apply on soils with > 5% organic matter.

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ROTATIONAL RESTRICTIONS

The following rotational crops may be planted after applying OXALIS® at the listed rate. Planting earlier than the recommended rotational interval may result in crop injury.

RATE	CROP	ROTATIONAL INTERVAL
60 ml/ac	Soybean	Immediately
	Field Corn	7 days
	Sorghum, Dry Common Beans ¹ , and Canola	9 months
	Alfalfa and Barley	11 months
	All other crops not listed ²	12 months
90 ml/ac	Soybean	Immediately
	Field Corn (minimum and no-till)	14 days
	Field Corn (conventional till)	30 days
	Sorghum, Dry Common Beans ¹	9 months
	Alfalfa, Barley, and Canola	11 months
	All other crops not listed ²	12 months

¹Common bean tolerance to OXALIS® varies by variety. Test a small area first and consult your seed supplier before broad adoption.

²Successful soil bioassay must be performed prior to planting crops not listed.

After periods of extended drought, when there is a lack of adequate soil moisture, longer rotational intervals may be needed. A successful soil bioassay should be performed prior to planting potential rotational crops to confirm safety.

MIXING INSTRUCTIONS

1. Fill clean spray tank $\frac{1}{2}$ to $\frac{3}{4}$ of desired level with clean water. Engage gentle agitation.
2. While agitating, slowly add OXALIS® to the spray tank. Agitation should create a rippling or rolling action on the water surface. Add tank mix partner if required following WAMLEGS.
3. Add adjuvants or surfactants, if recommended.
4. Fill spray tank to desired level with water. Agitation should continue until spray solution has been applied.
5. Mix only the amount of spray solution that can be applied the day of mixing. OXALIS® should be applied within 6 hours of mixing.

NOTE: If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).

GRAZING RESTRICTION

DO NOT graze, cut or feed treated crops to livestock.

ADJUVANT

Not all tank mixes require an adjuvant, see label for details.

STORAGE

Store in a cool, dry, secure place.

REGISTERED AND SUPPORTED TANK MIXES

- Glyphosate

QUICK TIPS:

No-till planters that incorporate the soil during planting may result in decreased weed control in the row - recommendation is to apply OXALIS® within 3 days of planting before soybeans emerge.



PHANTOM® 240 SL

Flexible application timing options this broadleaf and grassy weed control for soybeans and dry beans provides residual control to eliminate early season weed competition.



ACTIVE INGREDIENT

Imazethapyr 240 g/L = SL

APPLICATION RATES

Rate: 85–170 ml/ac

PACKAGING & ACRES TREATED

Case: 2 x 3.3 L jugs

Acres Treated: 19–39 ac/jug

WATER VOLUME

Ground: 40 L/ac (10 US gal/ac)

Aerial: Do not apply by air.

RAINFASTNESS

3 hours

REGISTERED CROPS

Crop	Application timing			
	Pre-plant	Pre-plant incorporated	Pre-emergent	Post-emergent
Adzuki Beans		•	•	
Alfalfa (grown for seed)		•	•	
Dry Common Beans (black, cranberry, Dutch brown, kidney, white, yellow eye)		Cranberry, Kidney, White	•	
Lima Beans (Ontario only)			•	
Processing Peas		•	•	
Snap Beans		•	•	
Snow Peas		•	•	
Soybeans	•	•	•	•

WEEDS CONTROLLED

Check label as weeds controlled vary by crop and application timing.

Broadleaf weeds (up to and including the 4-leaf stage):

- Cocklebur
- Eastern Black Nightshade¹
- Lady's Thumb
- Lamb's Quarters
- Ragweed (common, giant)¹
- Redroot Pigweed¹
- Smartweed
- Velvetleaf
- Wild Buckwheat
- Wild Mustard

¹ Excluding Group 2-resistant weeds

64 Always read and follow pesticide label directions.

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PHANTOM® 240 SL

WEEDS CONTROLLED (CONT'D)

Grasses:

- Barnyard Grass
- Crabgrass
- Foxtail (green, yellow)
- Proso Millet
- Witchgrass
- Yellow Nutsedge⁵

⁵ Suppression

HOW IT WORKS

PHANTOM® 240 SL is a selective herbicide that can be applied as an early pre-plant, pre-plant incorporated, pre-emergent or post-emergent treatment in various crops. The application method depends upon the crop, anticipated weed spectrum and the preference of the applicator. With early pre-plant and pre-emergent treatments, susceptible weeds emerge, are present as stunted plants and then die. When PHANTOM® 240 SL is applied post-emergence, absorption may occur through both the roots and foliage. Susceptible weeds stop growing and eventually die.

CROP STAGING

PHANTOM® 240 SL can be applied early pre-plant, pre-plant incorporated, pre-emergent or post-emergent depending on the crop.

REGISTERED AND SUPPORTED TANK MIXES†

Tank-mix option	Application timing			
	Early Pre-plant	Pre-plant incorporated	Pre-emergent	Post-emergent
Glyphosate	•			• ¹
Glyphosate + FirstRate®	•			
Trifluralin		•		
Edge®		•		
Lorox®/Linuron			•	
Basagran®				•
Basagran® Forte				•
ARROW® 240 EC, ARROW ALL IN®				•
LEOPARD®				•
SQUADRON®		•	•	•

¹ Glyphosate-tolerant soybeans only (i.e. varieties with the Roundup Ready®).

† Refer to page 139 for PRD tank-mixing directives.

GRAZING RESTRICTIONS

Do not graze treated crops or cut for hay.



PHANTOM® 240 SL

MIXING INSTRUCTIONS

1. Fill sprayer tank ½ full of water.
2. Start sprayer tank agitation.
3. Add the required amount of PHANTOM® 240 SL.
4. If necessary, add any required adjuvants or surfactants for tank-mix partners.
5. Complete filling tank with water with agitation on.

NOTE: If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).

RE-CROPPING RESTRICTIONS

There are several factors that affect the re-cropping following an imidazolinone application. If you are planning to use DAVAI® 80 SL, DAVAI® A PLUS, DAVAI® Q PLUS, PYTHON®, or PHANTOM® 240 SL, please consult the re-cropping restrictions and guidelines on page 76.

CROP ROTATIONS

These crops may be planted the season following a PHANTOM® 240 SL application:

- Adzuki Beans
- Black Beans
- Cranberry Beans
- Dutch Brown Beans
- Field Corn
- Clearfield® Canola and Corn
- Kidney Beans
- Lima Beans
- Processing Peas
- Soybeans
- Spring Barley
- Spring Wheat
- White Beans
- Winter Wheat
- Yellow-Eyed Beans

PRE-HARVEST INTERVALS

- Snap Beans: 40 days
- Processing Peas: 50 days
- Snow Peas: 60 days
- Lima Beans: 90 days
- Dry Beans¹, Soybeans: 100 days

¹ Kidney, adzuki, Dutch brown, black, yellow eye, white and cranberry beans.

RE-ENTRY INTERVAL (REI)

12 hours

STORAGE

Do not freeze.

QUICK TIPS:

PHANTOM® 240 SL requires moisture for activation. Soil-applied PHANTOM® 240 SL requires sufficient water within 7 days of application to moisten the soil to a depth of 2 inches for activation. If adequate moisture is not received within 7–10 days of application, perform a shallow inter-row cultivation 2–3" deep using a roller or S-tine cultivator to control escaped weeds until the field receives adequate moisture.

For early pre-plant applications (soybeans only), if more than 7–10 days elapse before the receipt of adequate precipitation to activate the herbicide and reduce the risk of weed escapes.



PYTHON®

Proven co-pack alternative, providing broad-spectrum weed control in soybeans and peas with two modes of action to combat weed resistance.



ACTIVE INGREDIENT

Imazamox 80 g/L and Bentazon 480 g/L = SL

APPLICATION RATES

Rate:

PYTHON® A: 100 ml/ac

PYTHON® B: 363 ml/ac

NOTE: Requires UAN 28% @ 0.810 L/ac (NOT included in the co-pack)

PACKAGING & ACRES TREATED

Case includes:

PYTHON® A: 1 × 4 L jug

PYTHON® B: 2 × 7.26 L jugs

Acres Treated: 40 acres/case

WATER VOLUME

Ground: Minimum 40 L/ac
(10 US gal/ac)

Aerial: Do not apply by air.

RAINFASTNESS

6 hours

REGISTERED CROPS

• Dry Beans

• Field Peas

• Soybeans

WEEDS CONTROLLED (APPLICATION TIMING)

Unless otherwise noted below, apply to young and actively growing weeds.

Broadleaves: Cotyledon–4 leaf:

- Cleavers⁵
- Cow Cockle
- Flixweed
- Green Smartweed
- Lamb's Quarters¹
- Redroot Pigweed¹
- Prostrate Pigweed¹
- Shepherd's Purse
- Stinkweed
- Stork's Bill
- Volunteer Canola²
- Wild Buckwheat⁵
- Wild Mustard

⁵Suppression only

¹PYTHON® A + PYTHON® B will provide more consistent control of Prostrate Pigweed, Redroot Pigweed and Lamb's Quarters including Group 2-resistant biotypes.

²Non imidazolinone-tolerant varieties

PYTHON®

WEEDS CONTROLLED (CONT'D)

Grasses: 1–4 leaf or early tillering:

- Barnyard Grass
- Green Foxtail³
- Japanese Brome Grass⁵
- Persian Darnel
- Volunteer Barley
- Yellow Foxtail
- Volunteer Canary Seed
- Volunteer Wheat
- Wild Oats³

⁵Suppression only

³Including Group-1-resistant weeds. PYTHON® A will not control weed biotypes that are multiple-resistant to both Group 1 and Group 2 herbicides.

HOW IT WORKS

The PYTHON® co-pack combines two powerful actives. PYTHON® A (imazamox) is systemic, readily absorbed through both leaf and root uptake. PYTHON® B (bentazon) is a contact herbicide. Good coverage and early application will give the best results.

CROP STAGING

- Dry Beans: After 1st trifoliate leaf has fully expanded up to 2nd trifoliate leaf
- Soybeans: Cotyledon to the 4-leaf stage
- Peas: 3 to 6 above-ground nodes

REGISTERED AND SUPPORTED TANK MIXES†

- ARROW® 240 EC
- ARROW ALL IN®
- LEOPARD®
- Glyphosate

† Refer to page 139 for PRD tank-mixing directives.

MIXING INSTRUCTIONS

1. Fill clean spray tank ½ full with water.
2. Start sprayer tank agitation.
3. Add the required amount of PYTHON® A.
4. Add the correct amount of PYTHON® B.
5. Add the required amount of UAN 28%.
6. Add required adjuvants or surfactants.
7. Complete filling tank with water with agitation on.

NOTE: If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).



PYTHON®

ADJUVANT RATES

- Agral® 90 @ 0.25% v/v
- Hasten® NT Ultra @ 0.5% v/v
- Merge® @ 0.5% v/v
- NORAC Methylated Seed Oil (MSO) @ 0.5% v/v

RE-ENTRY INTERVAL (REI)

12 hours

PRE-HARVEST INTERVALS

- Peas: 60 days
- Dry Beans: 75 days
- Soybeans: 85 days

GRAZING RESTRICTIONS

Do not graze treated crop.
Peas may be fed to livestock
30 days after application.

CROP ROTATIONS

(Can be seeded the following year)

- Barley
- Canola
- Field Corn
- Field Peas
- Oats
- Soybeans
- Imidazolinone-Tolerant
Sunflowers
- Wheat (spring)

RE-CROPPING RESTRICTIONS

There are several factors that affect the re-cropping following an imidazolinone application. If you are planning to use PYTHON®, DAVAI® 80 SL, DAVAI® A PLUS, DAVAI® Q PLUS, or PHANTOM® 240 SL, please consult the re-cropping restrictions and guidelines on page 76.

STORAGE

Do not freeze.

QUICK TIPS:

UAN 28% and an adjuvant are NOT included in the case, but are REQUIRED (a reduction in weed control can be observed without the addition of a nitrogen source).

Do not apply PYTHON® to any crops that have been subjected to stress from conditions—such as hail, flooding, hot/humid weather, drought, widely fluctuating temperature conditions, prolonged cold weather, or injury from prior herbicide applications—as crop injury may result.



SAFACYN® ET NEW

A new standard in harvest aid and weed management. This advanced formulation delivers fast and complete crop and weed dry down, while also enabling flexibility to use the adjuvant type and rate that fits your field & agronomic needs.

ACTIVE INGREDIENT

Saflufenacil 160 g/L SL

APPLICATION RATES

Rate: 156–312 ml/ha or 63–126 ml/ac

PACKAGING & ACRES TREATED

Case: 4 x 2.53 L

Acres Treated: 20–40 acres per jug;
80–160 acres per case

WATER VOLUME

Ground: 100–200 L/ha (10–20 US gal/ac)

Aerial: Do not apply by air.

RAINFASTNESS

Avoid application when heavy rain is in the forecast.



**CLICK
HERE**

Click to learn more about SAFACYN® ET's Pre-Plant application!

REGISTERED CROPS – PRE-HARVEST

Improved dry down of Volunteer Canola (all types including Roundup Ready®), Common Ragweed, Canada Fleabane, Redroot Pigweed and Wild Buckwheat. Consult the glyphosate label regarding additional pre-harvest weed control.

Crop	Timing	Seed Production or Restrictions on Glyphosate Use	No Restrictions on Glyphosate Use
Wheat, Barley & Triticale	Hard dough stage; a thumbnail impression remains on seed; less than 30% moisture.	126 ml/ac of SAFACYN® ET + adjuvant	63–126 ml/ac of SAFACYN® ET + 360 g a.e./ac of glyphosate + adjuvant

REGISTERED CROPS – HARVEST AID

SAFACYN® ET may be used as a harvest aid to accelerate the rate of dry down for crop and green weeds and improve crop uniformity to facilitate direct combining of soybeans, dry beans and canola. Early application may result in yield loss.

Crop	Timing	Seed Production or Restrictions on Glyphosate Use	No Restrictions on Glyphosate Use
Canola	Apply when 80% of seeds have changed colour.	126 ml/ac of SAFACYN® ET + adjuvant	63–126 ml/ac of SAFACYN® ET + 360 g a.e./ac of glyphosate + adjuvant
Dry Common Beans, Soybeans	Apply when 90% of pods have changed colour from green to yellow or brown.		

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SAFACYN® ET NEW

HOW IT WORKS

SAFACYN® ET is quickly absorbed into the plant and works by blocking an important enzyme called protoporphyrinogen oxidase (PPO), which is essential for normal plant function. When PPO is inhibited, the weed's cell membranes are damaged, causing the plant to die. Under active growing conditions, susceptible weeds can show symptoms within hours of application, with complete plant death typically occurring within 3–5 days depending on environmental conditions.

MIXING INSTRUCTIONS

1. Fill clean tank $\frac{1}{2}$ to $\frac{3}{4}$ full of clean water and turn agitation on.
2. Add the required amount of SAFACYN® ET herbicide and continue to agitate.
3. If required, add the correct amount of tank-mix partner while agitating.
4. Add the required amount of adjuvant while agitating.
5. Continue agitating and fill the remainder of the spray tank with water.

NOTE: If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).

ADJUVANT RATE

Add 30% phosphate ester surfactant, MSO adjuvant, Crop Oil Concentrate (COC) (e.g. Merge Adjuvant, Addit® Adjuvant) at 0.5 – 1% v/v or a non-ionic surfactant (NIS) at 0.25% v/v.

PRE-HARVEST INTERVAL FOR HARVEST AID AND PRE-HARVEST USE PATTERNS*

- Dry Beans: 2 days
- Soybeans, Canola, Wheat, Barley & Triticale: 3 days

When using a tank mix partner always refer to the PHI of that product.

* For tank mixtures with glyphosate make sure to follow the glyphosate's PHI.

GRAZING RESTRICTION

- Dry Beans, Soybeans: Do not graze or feed treated hay or straw to livestock.
- Canola, Wheat, Barley & Triticale: Straw can be used as feed or grazed 3 days after pre-harvest application.

REGISTERED AND SUPPORTED TANK MIXES

- Glyphosate

STORAGE

Do not freeze.

QUICK TIPS:

SAFACYN® ET has to enter the plant in order to work. When conditions are such that targeted weeds are hardened off, with tougher cuticles, higher surfactant rates (i.e. 1% v/v of an MSO or COC) can help improve efficacy.



SQUADRON®

Broad-spectrum herbicide registered for grassy and broadleaf weed control in a wide range of crops, most notably soybeans and potatoes. It can work alone or in combination with recommended tank mixes.



ACTIVE INGREDIENT

Metribuzin

APPLICATION RATES

Rate: Please refer to the label for application rates as these vary based on crop, soil type and application methods.

PACKAGING & ACRES TREATED

Case: 4 x 5 kg jugs

Acres Treated: 15–60 acres/jug

RAINFASTNESS

6 hours after foliar application

REGISTERED CROPS

- Asparagus (established)
- Fruit Trees (newly planted and established)
- Highbush Blueberries (newly planted)
- Potatoes
- Processing Carrots
- Soybeans¹
- Transplanted Tomatoes (grown for processing)

¹ Do not use Squadron® on AC Brant, Apache, Baron, Emosa, Maple Amber, Maple Ridge, IA 1003 or S-240 varieties.

WEEDS CONTROLLED

Broadleaf weeds:

- Carpetweed¹
- Cocklebur
- Common Chickweed
- Common Ragweed
- Corn Spurry²
- Dandelion (seedling)
- Green Smartweed
- Hemp-Nettle²
- Jimsonweed¹
- Lady's Thumb
- Lamb's Quarters
- Prickly Mallow
- Prostrate Pigweed
- Redroot Pigweed
- Russian Thistle
- Shepherd's Purse
- Stinkweed³
- Velvetleaf
- Wild Buckwheat³
- Wild Mustard
- Wild Potato Vine
- Yellow Woodsorrel¹

Grassy weeds:

- Barnyard Grass
- Cheat Grass
- Crabgrass
- Fall Panicum
- Giant Foxtail
- Green Foxtail
- Johnson Grass (seedling)
- Witch Grass
- Yellow Foxtail

¹Pre-emergence only

²Suppression with multiple post-emergent applications of 81 g/ac

³Post-emergent applications only

NOTE: When using SQUADRON® alone: Annual weeds less than 4 cm in height and residual control of annual weeds, use the higher rate for the control of grass weeds or when broadleaf weeds are dense. The rate of SQUADRON® depends on soil organic matter levels. See rates for SQUADRON® alone.

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HOW IT WORKS

Metribuzin inhibits the photosynthesis of grassy and broadleaf weeds. Used pre-emergent, susceptible weeds and crop seedlings emerge through treated soil, but 2–5 days later the weeds show chlorosis and necrosis. Plants treated post-emergent show chlorosis and necrosis between leaf veins, followed by wilting and death.

SOIL TYPES AND RESTRICTIONS

The recommended use rates of SQUADRON® are dependent upon soil texture and the organic matter content of the soil being treated: coarse, medium and fine.

The following chart outlines the soil textures included in each of the soil texture groupings:

Coarse	Medium	Fine
Loamy sand, Sandy loam	Loam, Silt loam, Silt, Sandy clay loam, Sandy clay	Silty clay loam, Silty clay, Clay loam, Clay

- On variable soils with coarse sandy areas, some crop injury may occur on the sandy areas if the rate used is for the finer soil type.
- Sandy loam and silty clay loam soils are transitional soils and may be classified as medium-textured soils in some regions.
- Do not use this product on muck soils. If SQUADRON® is applied to muck soils, subsequent crops may be injured.
- Do not use on coarse soils with less than 2% organic matter.

PRE-HARVEST INTERVALS

- Asparagus: 14 days
- Potatoes, Tomatoes: 60 days
- Newly Planted Blueberries: 2 years

RE-ENTRY INTERVAL (REI)

12 hours

GRAZING RESTRICTIONS

Grazing restrictions are crop-specific. Please refer to the label.

CROP ROTATIONS

Rotational crops such as Onions, Celery, Peppers, Cole Crops, Lettuce, Spinach, Sugar Beets, Table Beets, Turnips, Pumpkins, Squash, Cucumbers, Melons, Tobacco and Non-Triazine-Tolerant Canola (Rapeseed) are sensitive to SQUADRON® and may be injured if planted in soil treated during the year of application or the following crop year.

Fall planted or cover crops such as Wheat, Oats and Rye may be injured when planted within the same season.

STORAGE

To prevent contamination, store this product away from food or feed.

SQUADRON®

MIXING INSTRUCTIONS

1. Fill the spray tank or nurse tank ¼ full with water.
2. Start recirculation and agitation system and continue throughout mixing and application.
3. Add recommended amount of SQUADRON® and agitate until product is completely dispersed.
4. If tank mixing with wettable powders or other dry flowable products refer to these product labels for specific mixing instructions.
5. Fill spray tank with water to the desired level with agitation on.
6. If tank mixing with emulsifiable concentrates or soluble products, add these products near end of filling the spray tank.
7. Continue agitation during transport and application until the spray tank is empty.

NOTE: If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).

REGISTERED AND SUPPORTED TANK MIXES AND APPLICATION TIMING†

Crop	Application Method	Products
Soybeans	Pre-plant incorporated	SQUADRON® plus Treflan™ E.C., Dual II Magnum®, Frontier® or Axiom® DF
	Pre-emergence following pre-plant incorporated (PPI) application of other herbicides	Treflan™ E.C. followed by SQUADRON®; Dual II Magnum® followed by SQUADRON®
	Pre-plant surface or burn-off application	SQUADRON® alone or with PHANTOM® 240 SL (Pursuit®), Glyphosate, Axiom® DF, Lorox® DF, Dual II Magnum®
	Pre-emergence	SQUADRON® alone or with PHANTOM® 240 SL (Pursuit®), Glyphosate, Axiom® DF, Lorox® DF, Dual II Magnum®, Frontier®, Linuron 50%, Linuron 480, Broadstrike™ Dual

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REGISTERED AND SUPPORTED TANK MIXES AND APPLICATION TIMING (CONT'D)

Crop	Application Method	Products
Potatoes	Pre-emergence	SQUADRON® alone or with Dual II Magnum®, Linuron 50%, Linuron 480 g/L
	Early post-emergence	SQUADRON® alone or with Venture® L
	Pre-emergence or early post-emergence or pre-plant incorporated	SQUADRON® plus Dual II Magnum® or Eptam® 8-E
	Split application (pre- and post-emergence)	SQUADRON® alone
Transplanted Tomatoes (grown for processing only)	Pre-plant incorporated	SQUADRON® plus Treflan™ E.C., Dual II Magnum®
	Post-emergence	SQUADRON® alone
Asparagus (established)	Pre-emergence	SQUADRON® alone
Processing Carrots	Post-emergence	SQUADRON® alone
Highbush Blueberries (newly planted)	Pre-emergence to weeds	SQUADRON® alone

† Refer to page 139 for PRD tank-mixing directives.

QUICK TIPS:

Spray equipment must be thoroughly cleaned to remove remaining traces of SQUADRON® herbicide that might injure other crops. A heavy-duty detergent at the rate of 250 ml/100 L of water is recommended to aid in the cleanout.

RE-CROPPING RESTRICTIONS FOR DAVAI® 80 SL,
DAVAI® A PLUS, DAVAI® Q PLUS, PHANTOM® 240 SL
AND PYTHON®

There are several factors that effect the re-cropping following an Imidazolinone application. These include in order of importance:

- 1. Product: With imazethapyr for example being more persistent than imazamox.
- 2. Soil moisture: Need > 125 mm (5") of rain between herbicide application and Aug. 31 in the year of application.
- 3. Organic matter: Brown soil zone (< 3% organic matter) are more susceptible to carry over crop injury the year after application.
- 4. Rate: Depending on the crop and rates, soil residues can be an issue.
- 5. Soil pH: Persists longer in a pH < 5.5–6.

Depending on the following crop the level of sensitivity will vary. Please contact your local ADAMA Area Business Manager for more details.

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Scan here to make a comment, ask a question or request more information from your local ADAMA Area Business Manager. We'd love to hear from you.

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CORMORAN®

Multiple modes of action for Codling Moth control in apples and Colorado Potato Beetle control in potatoes as well as a wide range of other insects in specialty crops.



ACTIVE INGREDIENT

Novaluron 100 g/L and Acetamiprid 80 g/L = EC

APPLICATION RATES

Rate: 180–840 ml/ac

PACKAGING & ACRES TREATED

Case: 2 x 10.08 L jugs

Acres Treated: 12–56 ac/jug

WATER VOLUME

Ground: 80–400 L/ac
(20–105 US gal/ac)

Aerial: Do not apply by air.

RAINFASTNESS

Avoid application when heavy rain is forecast.

REGISTERED CROPS

- Alfalfa (grown for seed)
- Apples
- Brassica Leafy Greens (crop sub-group 4–13b)
- Bushberries (crop sub-group 13–07b)
- Head and Stem Brassica Vegetable Crops (crop group 5–13)
- Peppers (bell and non-bell)
- Potatoes
- Strawberries
- Stone Fruits (crop group 12–09)
- Sweet Corn

KEY INSECTS CONTROLLED

- Alfalfa Looper
- Alfalfa Plant Bug
- Aphids
- Apple Maggot
- Armyworm
- Blueberry Flea Beetle
- Blueberry Gall Midge (Cranberry Tip Worm)
- Blueberry Maggot Fly
- Blueberry Spanworm
- Cabbage Looper
- Cherry Fruit Fly (suppression)
- Cherry Fruitworm
- Codling Moth
- Colorado Potato Beetle
- Cranberry Fruitworm
- Diamondback Moth
- Dogwood Borer
- European Apple Sawfly
- European Corn Borer
- Green Fruitworm
- Gypsy Moth
- Imported Cabbageworm
- Japanese Beetle
- Leafhopper
- Leafroller
- Lesser Appleworm
- Lygus Bug
- Mullein Bug
- Oriental Fruit Moth
- Plum Curculio
- Spotted Wing Drosophila
- Strawberry Clipper Weevil
- Strawberry Rootworm
- Swede Midge
- Tarnished Plant Bug
- Tentiform Leafminer
- Thrips



CORMORAN®

HOW IT WORKS

CORMORAN® kills insect eggs by contact and larvae by ingestion. Containing two modes of action, CORMORAN® provides both rapid knockdown and residual control of insect pests.

CROP STAGING AND RATES

Crop	Insects Controlled	Rate	Application Instructions
Alfalfa (grown for seed)	Alfalfa Plant Bug, Lygus Bug	300–360 ml/ac	Applications per season: 2 Apply prior to bloom up to when 50% of seed pods are ripe. Do not exceed more than 720 ml/ac per season. Do not apply more than once in 7 days. Use higher rate for heavier infestations.
FRUITS			
Apples	Leafhopper, Tentiform Leafminer	280 ml/ac	Do not apply more than 2800 ml/ac per season. Apply in minimum finished spray volume of 400 L/ ac by ground.
	Aphids	280–420 ml/ac	
	Gypsy Moth, Japanese Beetle, Mullein Bug	340–500 ml/ac	Repeat applications if needed to maintain control but do not make applications < 12 days apart.
	Green Fruitworm	420 ml/ac	
	Apple Maggot, Codling Moth, European Apple Sawfly, Oriental Fruit Moth, Plum Curculio	420–500 ml/ac	
	Lesser Appleworm, Tarnished Plant Bug	500 ml/ac	
	Dogwood Borer	600 ml/ac	

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Crop	Insects Controlled	Rate	Application Instructions
FRUITS (CONT'D)			
Stone Fruit (Crop group 12–09) American Plum, Apricot, Beach Plum, Black Cherry, Canada Plum, Cherry Plum, Chicksaw Plum, Chinese Jujube, Damson Plum, Japanese Apricot, Japanese Plum, Klamath Plum, Nanking Cherry, Nectarine, Peach, Plum, Prune Plum, Plumcot, Sloe, Sweet Cherry, Tart Cherry and cultivars, varieties and/or hybrids of these commodities.	Oriental Fruit Moth (Ontario only)	580–840 ml/ac	Applications per season: 4 Apply in minimum finished spray volume of 405 L/ac. Use the high rate under heavy pest pressure. Do not apply during bloom. Minimum re-application interval of 10 days.
	Cherry Fruit Fly (suppression, cherry only), Plum Curculio (under high pressure, suppression only)	840 ml/ac	
Strawberries	Aphids, Leafhopper	200–300 ml/ac	Applications per season: 3 Do not apply more than once every 10–14 days. Apply in a min. application volume of 80 L/ac by ground. Do not apply during bloom.
	Strawberry Clipper Weevil, Tarnished Plant Bug	360 ml/ac	



CORMORAN®

CROP STAGING AND RATES (CONT'D)

Crop	Insects Controlled	Rate	Application Instructions
Bushberries (crop sub-group 13-07b): Aronia Berry, Blueberry (lowbush, highbush), Chilean Guava, Cranberry (highbush), Currant (black, buffalo, red), Elderberry, European Barberry, Gooseberry, Honeysuckle (edible), Huckleberry, Jostaberry, Juneberry (saskatoon berry), Lingonberry, Native Currant, Salal, Sea Buckthorn and cultivars, varieties and/or hybrids of these commodities.	Aphids, Blueberry Gall Midge (cranberry tipworm)	200 ml/ac	Applications per season: 3
	Japanese Beetle	280 ml/ac	Apply in a finished spray volume of 80 L/ac by ground.
	Blueberry Maggot Fly	300-560 ml/ac	
	Blueberry Flea Beetle, Blueberry Spanworm, Strawberry Rootworm, Cherry Fruitworm, Cranberry Fruitworm, Spotted Wing Drosophila, Thrips	560 ml/ac	Do not apply more than once every 10-14 days.
VEGETABLES			
Brassica (cole) Leafy Vegetables (crop group 5-13): Broccoli, Chinese Broccoli, Broccoli Raab (rapini), Brussels Sprouts, Cabbage, Chinese Cabbage (bok choy or napa), Cauliflower, Cavalo Broccoli, Collards, Kale, Kohlrabi, Mizuna, Mustard Spinach, Rape Greens and cultivars, varieties and/or hybrids of these commodities.	Alfalfa Looper, Armyworm, Cabbage Looper, Diamondback Moth, Imported Cabbageworm	180-300 ml/ac	Applications per season: · Low rate: 2 · High rate: 1
	Aphids	260-300 ml/ac	Do not apply more than 680 ml/ac per season. Apply in a minimum finished spray volume of 81 L/ac by ground.
	Lygus Bug, Swede Midge	200 ml/ac	

CORMORAN®

Crop	Insects Controlled	Rate	Application Instructions
VEGETABLES (CONT'D)			
Leafy Vegetables– Brassica Leafy Greens (crop sub-group 4–13b): Arugula, Broccoli Raab, Chinese Broccoli, Abyssinian Cabbage, Seakale Cabbage, Bok Choy (Chinese cabbage), Collards, Garden Cress, Upland Cress, Hanover Salad, Kale, Maca, Mizuna, Mustard Greens, Radish Leaves, Rape Greens, Wild Rocket, Shepherd’s Purse, Turnip Greens, Watercress, as well as cultivars, varieties and hybrids of these commodities.	Aphids	260–300 ml/ac	Applications per season: 3 Do not apply more than once every 7–10 days. Apply in a minimum finished spray volume of 80 L/ac by ground.
Corn (sweet)	Aphids	200–280 ml/ac	Applications per season: 2 Do not apply more than once every 21 days. Apply in a minimum 80 L/ ac spray volume by ground. Use the higher rate for heavier infestations.



CORMORAN®

CROP STAGING AND RATES (CONT'D)

Crop	Insects Controlled	Rate	Application Instructions
VEGETABLES (CONT'D)			
Peppers (bell and non-bell)	Colorado Potato Beetle	180–280 ml/ac	Do not make applications less than 7 days apart.
	Aphids	200 ml/ac	
	European Corn Borer	260–300 ml/ac	Do not apply more than 1050 ml/ac per season.
	Armyworm, Cabbage Looper	180–300 ml/ac	Apply in at least 80 L/ac by ground. For CPB, do not apply more than twice to a single generation and do not apply to successive generations.
Potatoes	Colorado Potato Beetle	180–280 ml/ac	Do not apply more than once every 10–14 days.
	Armyworm, Cabbage Looper	180–300 ml/ac	For Colorado potato beetle, do not apply more than twice to a single generation and do not apply to successive generations.
	Leafhopper	200–300 ml/ac	
	Aphids, European Corn Borer	260–300 ml/ac	Apply in minimum finished spray volume of 80 L/ac by ground.

MIXING INSTRUCTIONS

1. Fill sprayer tank ½ full of water.
2. Start sprayer tank agitation.
3. Add the required amount of CORMORAN®.
4. If necessary, add any required adjuvants or surfactants for tank-mix partners.
5. Complete filling tank with water.

NOTE: If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).

CORMORAN®

CROP ROTATIONS

No restrictions.

PRE-HARVEST INTERVALS

- Strawberries: 1 day
- Brassica Leafy Vegetables (Crop group 5–13 and subgroup 4–13B), Peppers, Potatoes, Stone Fruits (Crop group 12–09): 7 days
- Bushberries (Crop sub-group 13–07B): 8 days
- Sweet Corn: 10 days
- Alfalfa (grown for seed), Apples: 14 days

RE-ENTRY INTERVALS (REI)

Crop	Re-entry activities	Restricted entry interval
Alfalfa (grown for seed)	All activities	12 hours
Apples	Fruit thinning	7 days
	All other activities	12 hours
Bushberries (Crop sub-group 13–07B)	All activities	12 hours
Stone Fruit	Fruit thinning	6 days
	All other activities	12 hours
Strawberries	All activities	12 hours
Brassica (cole) Leafy Vegetables (Crop Group 5–13)	Hand weeding, scouting, tying and training	2 days
	All other activities	12 hours
Leafy Vegetables–Brassica Leafy Greens (Crop sub- group 4–13B)	All activities	12 hours
Peppers (bell and non-bell)		
Potatoes		
Sweet Corn		

STORAGE

- Store in original, tightly closed container.
- Do not ship or store near food, feed, seed and fertilizers.
- Store in cool, dry, locked, well-ventilated area without floor drain.
- Keep away from fire or open flame, or other sources of heat.

QUICK TIPS:

Consider early applications (before petal fall) of CORMORAN® to allow beneficial insects to build up later in the season. To minimize the possibility of transient effects on honeybee brood development, do not use CORMORAN® on blooming crops when bees are actively foraging.



COSAYR® NEW

This powerful Group 28 insecticide delivers rapid control of chewing insects and keeps working even after application. Trusted across a wide range of horticultural and field crops, it's your NEW go-to solution for long lasting peace of mind.



ACTIVE INGREDIENT

Chlorantraniliprole 200 g/L = SC

APPLICATION RATES

Rate: 125–500 ml/ha
(51–202 ml/ac)

PACKAGING & ACRES TREATED

Case: 12 x 1 L jugs
(treats 5–20 ac/jug)

Case: 2 x 6 L jugs
(treats 30–120 ac/jug)

Acres Treated: 60–240 ac/case

WATER VOLUME

Ground: Minimum 100 L/ha (40 L/ac)

Aerial: 50 L/ha (20 L/ac)

RAINFASTNESS

Avoid application when heavy rain is forecast.

GRAZING RESTRICTION

None

REGISTERED CROPS

For a complete list of all crops registered for COSAYR® please refer to the label.

- Barley
- Brassica Vegetables
- Corn (field, popcorn, seed and sweet)
- Cucurbits
- Fruiting Vegetables
- Grass Forage, Fodder and Hay
- Green Onions
- Leafy Vegetables
- Legume Vegetables
- Non Grass Animal Feeds
- Oats
- Oil Seed Crops (canola, mustard, flax, sunflower)
- Potatoes
- Root and Tuber Vegetables
- Rye
- Soybeans
- Triticale
- Wheat

KEY INSECTS CONTROLLED

For a complete list of all insects controlled by COSAYR® please refer to the label.

- Alfalfa Weevil⁵
- Armyworm (beet, bertha, fall)
- Beet Webworm
- Cabbage Looper
- Colorado Potato Beetle
- Corn Earworm
- Cutworms (black, variegated, western bean)
- Diamondback Moth
- European Corn Borer
- Flea Beetles
- Fruit Worm (tomato)
- Grasshoppers
- Hornworm (tomato, tobacco)
- Imported Cabbageworm
- Leafminer (lepidopteran, *liriomyza sativae*, *liriomyza trifolii*)
- Sunflower Head Moth¹
- Swede Midge

⁵Suppression

¹Reduces damage caused by Banded Sunflower Head Moth

86 Always read and follow pesticide label directions.

GO TO:

HERBICIDES

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ADDITIONAL
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CROP STAGING & RATES

Apply at the recommended rates when insect populations reach locally determined economic thresholds.

Crop	Insects Controlled	Acres per Case	Rate
Cereals	Cutworms	119 ac/case	101 ml/ac
	Armyworms, Fall Armyworm, Corn Earworm, European Corn Borer	79–119 ac/case	101–152 ml/ac
	Flea Beetles, Grasshoppers	119–234 ac/case	51–101 ml/ac
Corn	Black Cutworm	119 ac/case	101 ml/ac
	Armyworm, Fall Armyworm, Beet Armyworm, Variegated Cutworm, Corn Earworm / Tomato, Fruit Worm, European Corn Borer, Western Bean Cutworm	79–119 ac/case	101–152 ml/ac
Potatoes	European Corn Borer	79–119 ac/case	101–152 ml/ac
	Colorado Potato Beetle	59–119 ac/case	101–202 ml/ac
Soybeans	Cutworms	119 ac/case	101 ml/ac
	Grasshoppers	119–234 ac/case	51–101 ml/ac
	Armyworm	79–119 ac/case	101–152 ml/ac

HOW IT WORKS

Chlorantraniliprole binds to a specific receptor in the muscles called the ryanodine receptor. Once bound to this receptor the muscle cells begin to leak calcium, which prevents normal function. The insect is paralyzed and dies.

REGISTERED AND SUPPORTED TANK MIXES†

Insecticides:

- Deltamethrin
- SILENCER® 120 EC

Fungicides:

- MAXENTIS®

STORAGE

Store this product away from food or feed. Store product in original container only, away from other pesticides and fertilizer. Not for use or storage in or around the home.

**COSAYR®****NEW****MIXING INSTRUCTIONS**

1. Fill spray tank $\frac{1}{2}$ full of water.
2. Add COSAYR® directly to spray tank. Mix thoroughly to fully disperse the insecticide; once dispersed continued agitation is required.
3. Once the product has been well mixed, add an adjuvant, where applicable, while continuously mixing.
4. Complete filling tank with water maintaining agitation during mixing and spraying operations.

Spray mix should not be stored overnight in spray tank.

NOTE: If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).

PRE-HARVEST INTERVALS

See label for full list of crops and PHI's.

- Non-Grass Animal Feeds, Hops, Grass Forage, Fodder and Hay: 0 days
- Oil Seeds, Greenhouse Vegetables (cucumbers, peppers, eggplants, tomatoes), Cereal Crops, Root and Tuber Vegetables, Leafy Vegetables, Legume Vegetables, Fruiting Vegetables, Cucurbit Vegetables, Seed and Sweet Corn: 1 day
- Brassica Vegetables: 3 days
- Field Corn, Popcorn: 14 days

ADJUVANT RATE

- NIS @ 0.25% v/v
- MSO @ 0.5% v/v

See label for COSAYR® uses which require adjuvant for optimal control.

CROP ROTATIONS

N/A

RE-ENTRY INTERVAL (REI)

12 hours

QUICK TIPS:

Can be applied in a flexible temperature range of 4–40C°. Do not make a foliar application of COSAYR® for a minimum of 60 days following an in-furrow or soil application or planting of seed or seed pieces treated with any Group 28 insecticide.

SILENCER® 120 EC

SILENCER® 120 EC controls a wide range of insects in field, tree fruit and horticulture crops.



ACTIVE INGREDIENT

Lambda-cyhalothrin 120 g/L = EC

APPLICATION RATES

Rate: 17–94 ml/ac (standard rate for most pests: 34 ml/ac)

PACKAGING & ACRES TREATED

Case: 4 x 3.785 L jugs

Acres Treated: 40–220 ac/jug (110 ac/jug at standard rate)

WATER VOLUME

Ground: 40–80 L/ac
(10–20 US gal/ac)

Aerial: 4–16 L/ac (1–4 US gal/ac)

RAINFASTNESS

Avoid application when heavy rain is forecast.

REGISTERED CROPS

- Brassica Crops (broccoli, Brussels sprouts, cabbage, cauliflower)
- Carrots
- Cereals (wheat, barley, oats)
- Cherries
- Choke Cherry
- Corn (field)
- Dry Beans
- Nectarines
- Pears
- Peas
- Plums
- Potatoes
- Shelterbelts
- Soybeans
- Strawberries
- Sweet Potatoes
- Tobacco
- Tomatoes

SILENCER® 120 EC is registered for use on more than 30 crops; refer to the label for more information.

KEY INSECTS CONTROLLED

- Armyworm
- Bean Aphid
- Bean Leaf Beetle
- Bertha Armyworm
- Black Vine Weevil (adults)
- Bud (clipper) Weevil
- Cabbage Looper
- Cabbage Seedpod Weevil (adults)
- Carrot Rust Fly
- Carrot Weevil
- Cherry Maggot
- Codling Moth
- Colorado Potato Beetle
- Corn Earworm
- Crucifer Flea Beetle
- Cutworms
- Darksided Cutworm
- Diamondback Moth Larvae
- European Asparagus Aphids
- European Corn Borer
- Fall Armyworm
- Fruit Tree Leafroller
- Grasshoppers
- Green Peach Aphid
- Imported Cabbageworm
- Lygus Bug
- Meadow Spittle Bug
- Mealy Plum Aphid
- Onion Thrips
- Oriental Fruit Moth
- Pea Aphid
- Pea Leaf Weevil
- Pear Psylla (nymphs, adults)
- Plum Curculio
- Potato Flea Beetle
- Potato Leafhopper
- Prairie Tent Caterpillar
- Soybean Aphid
- Spotted Tentiform Leafminer
- Swede Midge
- Tarnished Plant Bug
- Tuber Flea Beetle
- Ugly Nest Caterpillar
- Western Bean Cutworm



SILENCER® 120 EC

APPLICATION TIMING AND CROP STAGING

The need and timing of an application should be based on the presence of pests at vulnerable developmental stages and significant populations, as determined by local monitoring.

Consult the label for specific crop and insect timing.

Crop	Insects Controlled	Acres per Jug	Rate
Wheat, Barley, Oats	Armyworm, Grasshoppers	110 ac/jug	34 ml/ac
Soybean, Bean (succulent & dry), Peas (field, succulent & pigeon)	Soybean Aphid, Pea Aphid, Bean Aphid, Bean Leaf Beetle	40–110 ac/jug	34–94 ml/ac
	Western Bean Cutworm	50–110 ac/jug	34–76 ml/ac
	Cutworms, Potato Leafhopper, Lygus Bugs, Grasshoppers ¹	110 ac/jug	34 ml/ac
Potatoes	Potato Flea Beetle, Potato Leafhopper, Tarnished Plant Bug, Tuber Flea Beetle, European Corn Borer	110 ac/jug	34 ml/ac
	Colorado Potato Beetle	75–110 ac/jug	34–50 ml/ac
Corn (including field, pop and sweet types)	Armyworm, Fall Armyworm, Cutworm, Corn Earworm	110 ac/jug	34 ml/ac
	European Corn Borer	50–110 ac/jug	34–76 ml/ac
Brassica Crops (broccoli, Brussels sprouts, cabbage, cauliflower)	Swede Midge	110 ac/jug	34 ml/ac
	Onion Thrips ²	50 ac/jug	76 ml/ac
Carrots	Carrot Rust Fly, Carrot Weevil	110 ac/jug	34 ml/ac
Cherries	Plum Curculio, Cherry Maggot	90 ac/jug	42 ml/ac
Nectarines	Green Peach Aphid, Oriental Fruit Moth, Tarnished Plant Bug	90 ac/jug	42 ml/ac
Pears	Pear Psylla (nymphs and adults), Codling Moth	110 ac/jug	34 ml/ac
Plums	Plum Curculio, Mealy Plum Aphid	90 ac/jug	42 ml/ac
Chokecherry, Shelterbelts	Prairie Tent Caterpillar, Ugly Nest Caterpillar, Fruittree Leafroller	165 ac/jug	23 ml/ac

Refer to the label for application guidelines and restrictions by crop.

¹ Grasshoppers only registered in soybeans, field peas, chickpeas, lentils

² Only broccoli, Chinese broccoli (gai lan), Brussels sprouts, cabbage, Chinese cabbage (napa), cauliflower and kohlrabi

HOW IT WORKS

Fast-acting stomach and contact insecticide.

CROP ROTATIONS

No restrictions the year following treatment

90  Always read and follow pesticide label directions.

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ADDITIONAL
RESOURCES

SILENCER® 120 EC

REGISTERED AND SUPPORTED TANK MIXES†

Herbicides:

- BISON® 400 L
- SQUADRON®

Insecticides:

- COSAYR®

Fungicides:

- Allegro®
- BUMPER® 432 EC
- MAXENTIS®
- SORATEL®

† Refer to page 139 for PRD tank-mixing directives.

MIXING INSTRUCTIONS

Confirm compatibility in advance by premixing small proportional quantities of water with SILENCER® 120 EC and the tank-mix partner.

1. Fill sprayer tank ½ full of water.
2. Start sprayer tank agitation.
3. Add the required amount of SILENCER® 120 EC.
4. If necessary, add any required adjuvants or surfactants for tank-mix partners.
5. Complete filling tank with water with agitation on.

NOTE: If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).

RE-ENTRY INTERVALS (REI)

Corn (sweet/field):

- Hand harvesting/hand detasseling: 3 days
- All other activities: 12 hours

All other crops:

- All activities: 12 hours

PRE-HARVEST INTERVALS*

- Corn (field): 21 days
- Legumes (soybeans, beans, field peas): 21 days
- Oilseeds: 7 days
- Potatoes: 7 days
- Timothy: 14 days
- Wheat, Barley, Oats: 28 days

*See label for full list of pre-harvest intervals for all registered crops.

GRAZING RESTRICTIONS

- DO NOT graze treated fields.
- Grain/Seed and Meal from Canola, Cereals, Field Corn, Soybeans and Legume Vegetables (including pulses) treated with SILENCER® 120 EC can be fed to livestock. DO NOT feed other parts of treated crops to livestock.
- DO NOT cut treated fields for silage/forage.
- For grasses/non-grasses grown for seed production only, DO NOT feed seed screenings and aftermath to livestock.

STORAGE

Do not freeze.

QUICK TIPS:

Apply below temperatures of 25°C. Apply in the evening or early morning when temperatures are cool to get the best control. Wait 24 hours before re-entry.



SILENCER® DUO

NEW

Dual-mode insecticide for resistance management with both superior knockdown and extended control of the most harmful insects.



ACTIVE INGREDIENT

SILENCER® DUO A: Chlorantraniliprole 200 g/L = SC

SILENCER® DUO B: Lambda-cyhalothrin 120 g/L = EC

APPLICATION RATES

Rate:

SILENCER® DUO A: 94–283 ml/ha (38–116 ml/ac)

SILENCER® DUO B: 64–187 ml/ha (26–76 ml/ac)

PACKAGING & ACRES TREATED

SILENCER® DUO A = 2 x 6.06 L

SILENCER® DUO B = 2 x 4.03 L

Acres Treated: 106–316 acres/case

WATER VOLUME

Ground: 100 L/ha (10 US gal/ac) minimum

Aerial*: 50 L/ha (5 US gal/ac) minimum

*Not all crops and pests are registered for aerial application. Please refer to the labels

RAINFASTNESS

Avoid application when heavy rain is forecast.

REGISTERED CROPS

- Canola
- Dry Beans
- Soybeans
- Cereals
(wheat, barley, oats)
- Field Peas

HOW IT WORKS

Dual-mode – Fast knockdown effect by contact and long-lasting control by ingestion.

RE-ENTRY INTERVALS (REI)

All crops:

- All activities: 12 hours

SILENCER® DUO NEW

CROP STAGING

Apply at the recommended rates when insect populations reach locally determined economic thresholds.

KEY INSECTS CONTROLLED

Crop	Insects Controlled	Acres per Case	Rate
Canola	Bertha Armyworm, Diamondback Moth, Crucifer Flea Beetle, Grasshoppers (standard & aerial rate), Swede Midge	240 ac/case	SILENCER® DUO A 51 ml/ac SILENCER® DUO B 34 ml/ac
	Low Rate: Flea Beetles, Grasshoppers	316 ac/case	SILENCER® DUO A 38 ml/ac SILENCER® DUO B 26 ml/ac
Field Peas, Dry Beans and Soybeans	Bean Leaf Beetle ¹ , Western Bean Cutworm, Aphids ¹ (soybean aphid, pea aphid, bean aphid)	106 ac/case	SILENCER® DUO A 116 ml/ac SILENCER® DUO B 76 ml/ac
	Grasshoppers, Aphids ¹ (soybean aphid, pea aphid, bean aphid)	240 ac/case	SILENCER® DUO A 51 ml/ac SILENCER® DUO B 34 ml/ac
Barley, Oats and Wheat	Grasshoppers (standard & aerial rate), Armyworm	240 ac/case	SILENCER® DUO A 51 ml/ac SILENCER® DUO B 34 ml/ac
	Grasshoppers (low rate)	316 ac/case	SILENCER® DUO A 38 ml/ac SILENCER® DUO B 26 ml/ac

Refer to the label for application guidelines and restrictions by crop.

¹Knockdown only on this pest

² Residual control only on this pest



SILENCER® DUO

NEW

MIXING INSTRUCTIONS

1. Fill spray tank $\frac{1}{2}$ full of water.
2. Add SILENCER® DUO A directly to spray tank. Mix thoroughly to fully disperse the insecticide; once dispersed continued agitation is required.
3. Add SILENCER® DUO B into spray tank and continue to mix.
4. Once the product has been well mixed, add an adjuvant, where applicable, while continuously mixing.
5. Complete filling tank with water maintaining agitation during mixing and spraying operations.

*Spray mix should not be stored overnight in spray tank.

NOTE: If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).

PRE-HARVEST INTERVALS

- Canola: 7 days
- Cereals (wheat, barley, oats): 28 days
- Dry Beans: 21 days
- Field Peas: 21 days
- Soybeans: 21 days

GRAZING RESTRICTIONS

- DO NOT graze treated fields.
- Grain/seed and meal from Canola, Cereals, Soybeans and Legume Vegetables (including pulses) treated with SILENCER® DUO can be fed to livestock. DO NOT feed other parts of treated crops to livestock.
- DO NOT cut treated fields for silage/forage.
- For grasses/non-grasses grown for seed production only, DO NOT feed seed screenings and aftermath to livestock.

CROP ROTATIONS

N/A

ADJUVANT RATE

No adjuvant needed

RE-ENTRY INTERVAL

All Crops:

- All activities: 12 hours

STORAGE

Do not freeze.

QUICK TIPS:

SILENCER® DUO has both contact and residual activity, allowing for broad flexibility in terms of application timing. However, for optimal activity target applications when the insect pests are actively feeding within the canopy.



FUNGICIDE

.....

DISEASE CONTROL

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Herbicide

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LOADING...



For products that were not registered prior to the printing of this guide, label updates and our latest innovative solutions, please scan here to discover more details.



FUNGICIDE

.....

BUMPER® 432 EC	97
CAPTAN 480 SC	100
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ORIUS® 430 SC	116
SORADUO™	119
SORATEL®	121
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BUMPER® 432 EC

Broad-spectrum systemic fungicide that protects against yield and quality losses due to leaf disease including Mummy Berry in blueberries.



Low VOC

FORMULATION TECHNOLOGY

ACTIVE INGREDIENT

Propiconazole 432 g/L = EC

APPLICATION RATES

Rate: 60–180 ml/ac

PACKAGING & ACRES TREATED

Case: 2 x 4.8 L jugs

Acres Treated: 27–80 ac/jug

WATER VOLUME

Ground: min 80 L/ac (20 US gal/ac)

Aerial: 16–20 L/ac (4–5 US gal/ac)

RAINFASTNESS

1 hour

REGISTERED CROPS

- Apricots
- Asparagus
- Barley
- Blueberries (lowbush, highbush)
- Canola
- Cherries (sweet, sour)
- Corn
- Cranberries
- Caneberries
- Dry Edible Beans
- Nectarines
- Oats
- Peaches
- Plums
- Saskatoon Berries
- Soybeans
- Wheat (spring, winter)

KEY DISEASES CONTROLLED

- Black Knot (suppression)
- Blackleg
- Brown Rot
- Cherry Leaf Spot
- Cottonball
- Mummy Berry
- Net and Spot Blotches
- Powdery Mildew
- Rusts
- Rutabagas
- *Septoria* Spots and Blotches
- Scalds
- Tan Spots
- Yellow Rust

HOW IT WORKS

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

BUMPER® 432 EC

APPLICATION TIMING AND CROP STAGING

Crop	Diseases	Timing
½ rate at 60 ml/ac		
Barley	Net Blotch	Early: Growth stage 12–23, as early as the 2-leaf stage
Wheat	Septoria Leaf Spot, Tan Spot	
Full rate at 120 ml/ac		
Barley	Leaf and Stem Rust, Septoria Leaf Spot, Net Blotch, Powdery Mildew, Scald, Spot Blotch	Early: Growth stage 29–37, at the first sign of disease, usually at the beginning of stem elongation Later: Growth stage 49–55, before head is half emerged
Oats	Crown Rust, Septoria Leaf Blotch	
Wheat	Glume Blotch, Leaf and Stem Rust, Powdery Mildew, Septoria Leaf Spot, Stripe Rust, Tan Spot	
Canola	Blackleg	Rosette stage, between 2 nd true leaf and bolting
Corn	Eye Spot, Grey Leaf Spot, Helminthosporium Leaf Spot, Northern Corn Leaf Blight, Rusts, Southern Corn Leaf Blight	When disease first appears
Soybeans (for seed)	Frogeye Leaf Spot, Aerial Web Blight	When disease first appears. Under severe disease pressure, make a 2 nd application 14 days after the first.
Dry Edible Beans	Rust	At the first detection of disease and a 2 nd application 14–21 days later

FRUIT AND SPECIALTY CROP USES

NOTE: See label for full list of fruit and specialty crops and diseases.

Crop	Diseases
Asparagus	Rust
Cranberries	Cottonball
Blueberries (highbush, lowbush)	Mummy Berry
Kentucky Bluegrass (grown for seed)	Powdery Mildew
Peaches, Nectarines, Plums, Apricots	Brown Rot Blossom Blight, Fruit Brown Rot
Plums, Sour Cherries	Black Knot (suppression only)
Rutabagas	Powdery Mildew

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BUMPER® 432 EC

FRUIT AND SPECIALTY CROP USES (CONT'D)

Crop	Diseases
Saskatoon Berries	Entomosporium Leaf and Berry Spot, Saskatoon Juniper Rust
Sweet and Sour Cherries	Brown Rot Blossom Blight, Fruit Brown Rot, Cherry Leaf Spot
Western Red Cedar	Keithia Foliar Blight

REGISTERED AND SUPPORTED TANK MIXES†

Herbicides:

- 2,4-D ESTER 700
- BADGE®
- BROMOTRIL® 240 EC
- MCPA ESTER 600

Insecticides:

- SILENCER® 120 EC

† Refer to page 139 for PRD tank-mixing directives.

MIXING INSTRUCTIONS

1. Fill spray tank ½ full with water and gently agitate.
2. Add the required amount of BUMPER® 432 EC and agitate thoroughly.
3. Continue filling the tank with water until the tank is ¾ full and, if applicable, add the required amount of tank-mix partner.
4. Complete filling the spray tank with water, maintaining agitation during mixing and spraying operations.

NOTE: If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).

PRE-HARVEST INTERVALS

NOTE: See label for PHIs for all registered crops.

- Corn: 14 days
- Beans: 28 days
- Cereal Crops (wheat, barley, oats): 45 days
- Soybeans: 50 days
- Canola: 60 days

RE-ENTRY INTERVALS (REI)

NOTE: Any activities or crops not listed have an REI of 12 hours.

Highbush Blueberries:

- Hand pruning: 5 days

Corn:

- Hand harvesting/hand detasseling: 1 day

GRAZING RESTRICTIONS

Do not graze livestock within three (3) days of spraying.

CROP ROTATIONS

No restrictions

STORAGE

May be stored at any temperature

QUICK TIPS:

BUMPER® 432 EC should be applied as a preventative disease control measure. Established diseases are more difficult to control and may have already reduced crop vigour.

CAPTAN 480 SC

CAPTAN 480 SC controls a wide variety of diseases in fruit, vegetable and ornamental crops.



ACTIVE INGREDIENT

Captan 482 g/L

APPLICATION RATES

Rate: Varies by crop, refer to table below.

PACKAGING & ACRES TREATED

Case: 2 x 10 L jugs

Acres Treated: Varies

WATER VOLUME

Ground: 400 L/ac (105 US gal/ac)*

Aerial: 20 L/ac (5 US gal/ac)

*unless otherwise noted in the charts on page 101–102

RAINFASTNESS

Avoid application when heavy rain is forecast.

REGISTERED CROPS

This is only a partial list of crops registered for use with CAPTAN 480 SC. For the full list, please refer to the CAPTAN 480 SC label.

- Apples
- Apricots
- Blackberries
- Blueberries (highbush, lowbush)
- Cherries
- Cucumbers (field grown)
- Ginseng
- Grapes
- Loganberries
- Nectarines
- Peaches
- Pears¹
- Plums
- Potatoes
- Prunes
- Raspberries
- Rhubarb
- Strawberries (field grown)
- Tomatoes (field grown—foliar applications)
- Turf (golf course, sod farms only)
- Outdoor Ornamentals (cut and non-cut flowers)
- Greenhouse Ornamentals (non-cut flower: foliar applications to aster, camellia, carnation, chrysanthemum, dahlia, lilac, rose and tulip)
- Soil and Greenhouse Bench Treatment (soil treatment: seedlings or transplants of roses and other flowers, shrubs, trees, lawn seedbeds, beans, celery, crucifers, eggplants, peas, tomatoes, peppers)

¹ Do NOT use on D'Anjou pears.

CAPTAN 480 SC

KEY DISEASES CONTROLLED AND APPLICATION RATES

NOTE: Water volume (ground application) is 400 L/ac unless otherwise noted.

Crop	Diseases	Application Rate
FRUIT CROPS		
Apples	Bitter Rot, Black Rot, Brook's Spot, Bull's-Eye Rot, Fly Speck, Scab, Sooty Blotch	Rate: 2 L/ac (0.97 kg a.i./ac) Apply at a minimum of a 7-day interval. Maximum Applications per year:
Pears (do not use on D'Anjou pears)	Scab, Sooty Blotch	High-density orchards: 10 Low-density orchards: 2 When hand thinning is performed, make one (1) application before hand thinning fruit and 1 application after hand thinning fruit.
Apricots	Brown Rot	Rate: 2.69 L/ac (1.3 kg a.i./ac) Maximum applications per year: 1
Cherries (sour, sweet)	Brown Rot, Leaf Spot	
Nectarines, Peaches	Brown Rot, Scab	
Plums, Prunes	Black Knot, Brown Rot	
Grapes	Dead Arm (current season's infections)	Rate: 1.33 L/ac (0.65 kg a.i./ha) Apply when new shoots are 1–5 cm long and again when 10–15 cm long. Maximum applications per year: 2
	Black Rot, Downy Mildew	Rate: 1.33–2.0 L/ac (0.65–0.97 kg a.i./ha) Maximum applications per year: 1
Blueberries	Fruit Rot, Mummy Berry	Rate: 1.5 L/ac (0.73 kg a.i./ha) Apply at a minimum of a 7-day interval. Maximum applications per year: 6 DO NOT apply by air.
Blackberries	Fruit Rot	
Loganberries	Cane Spot, Fruit Rot, Leaf Spot, Spur Blight	Rate: 1.0–1.5 L (0.49–0.73 kg a.i.) Apply at a minimum of a 7-day interval. Maximum applications per year: 6 DO NOT apply by air.
Raspberries	Fruit Rot, Spur Blight	Rate: 1.68 L (0.81 kg a.i.) Apply at a minimum of a 7-day interval. Maximum applications per year: 6 DO NOT apply by air.

CAPTAN 480 SC

KEY DISEASES CONTROLLED AND APPLICATION RATES (CONT'D)

NOTE: Water volume (ground application) is 400 L/ac unless otherwise noted.

Crop	Diseases	Application Rate
FRUIT CROPS (CONT'D)		
Strawberries	Gray Mould Rot, Leaf Spot	Rate: 2.35 L (1.13 kg a.i.) Apply at a minimum of a 7-day interval. Maximum applications per year: 6 DO NOT use on greenhouse strawberries.
Rhubarb (in forcing sheds)	Grey Mould	Rate: 0.85–1.34 L (0.4–0.65 kg a.i.) Maximum spray volume: 60 L/ac Apply at a minimum of a 7-day interval. Maximum applications per year: 6 DO NOT apply by air.
VEGETABLE CROPS		
Cucumbers	Anthrachnose, Scab	Rate: 1.5–2.83 L/ac (0.73–1.38 kg a.i./ha) Apply at a minimum of a 7-day interval. Maximum applications per year: 3 DO NOT use on greenhouse cucumber.
Potatoes	Early Blight, Late Blight	Rate: 1.68–2.52 L/ac (0.81–1.21 kg a.i./ha) Apply at a minimum of a 7-day interval. Maximum applications per year: 3
Tomatoes	Anthrachnose, Septoria Leaf Spot	Rate: 1.85–2.83 L/ac (0.89–1.38 kg a.i./ha) Apply at a minimum of a 7-day interval. Maximum applications per year: 3 DO NOT use on greenhouse tomato.
Ginseng	Grey Mould, Pythium Root Rot and Damping-Off, Phytophthora Root Rot, Rhizoctonia Root Rot, Cylindrocarpon Root Rot (suppression only)	Rate: 1.68 L/ac (0.81 kg a.i./ha) in 378–757 L of water per acre Apply at a minimum of a 7-day interval. Maximum applications per year: 8 DO NOT apply by air.

See label for complete list of crops and diseases controlled by CAPTAN 480 SC for each.

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CAPTAN 480 SC

TANK MIXES†

Nova™ and other myclobutanil products.

When tank mixes are permitted, consult the labels of the tank-mix partners and observe the largest (most restrictive) spray buffer zone of the products involved in the tank-mix and apply using the coarsest spray (ASAE) category indicated on the labels for those tank-mix partners.

† Refer to page 139 for PRD tank-mixing directives.

MIXING INSTRUCTIONS*

1. Before using, mix contents of the container thoroughly to ensure the product is suspended.
2. Fill the spray tank to at least ½ capacity with clean water and begin agitation.
3. Pour recommended amount of CAPTAN 480 SC into the spray tank.
4. Before adding any optional tank-mix partners, add more water and add the partner according to product labels.
5. Add balance of water.
6. Maintain agitation during filling and spraying operations. Do not allow mixture to stand.

* Use a screen not finer than 50 mesh in entire system.

NOTE: If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).

CROP ROTATION AND GRAZING RESTRICTIONS

No restrictions

STORAGE

Store this product away from food or feed.

QUICK TIPS:

Alkaline materials such as spray lime, lime-sulfur and Bordeaux mixture will reduce the fungicidal activity of CAPTAN 480 SC. Do not apply CAPTAN 480 SC in combination with or immediately before or closely following oil sprays. Combinations with solvent formulation of organic phosphates should not be used.

CAPTAN 480 SC

RE-ENTRY INTERVALS (REI)

NOTE: If the re-entry interval (REI) for hand harvesting and the pre-harvest interval (PHI) are different, follow the longer of the two intervals. See label for the full list of crops and associated PHIs.

Crop	Activity	REI ¹ and/or PHI
VEGETABLE CROPS		
Cucumber (field grown)	Hand-set/hand-line irrigation-related activities involving foliage contact	10 days
	Harvesting	8 days
	Training, tying	3 days
	All other activities	12 hours
Ginseng	Harvesting	20 days
	Hand-set/hand-line irrigation-related activities involving foliage contact	7 days
	All other activities	12 hours
Potatoes	Harvesting	8 days
	Hand-set/hand-line irrigation-related activities involving foliage contact	7 days
	Rogueing	6 days
	All other activities	12 hours
Tomatoes (field grown, foliar applications)	Hand-set/hand-line irrigation-related activities involving foliage contact	10 days
	Harvesting	8 days
	Training, tying	7 days
	All other activities	12 hours
FRUIT CROPS		
Stone Fruit Trees (cherry, peach, plum, prune, apricot, nectarine)	Hand thinning	29 days
	Hand harvesting	15 days
	Mechanically-assisted harvesting	8 days
	All other activities	1 day

¹ REIs longer than 12 hours apply to hand labour tasks.

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CAPTAN 480 SC

RE-ENTRY INTERVALS (CONT'D)

Crop	Activity	REI ¹ and/or PHI
FRUIT CROPS (CONT'D)		
Grapes	Turning, girdling	78 days
	Hand harvesting, training (full foliage), tying (full foliage), leaf pulling by hand	55 days
	Mechanically-assisted harvesting	8 days
	All other activities	12 hours
Apple and Pear trees (high-density) <i>NOTE: maximum canopy width per tree is 2 m (1 m to reach center or trunk from the row alley).</i>	Mechanically-assisted harvesting	8 days
	Hand pruning, training	6 days
	All other activities	2 days
Apple and Pear trees (non-high-density)	Hand thinning	24 days
	Hand harvesting	19 days
	Mechanically-assisted harvesting	8 days
	Hand pruning, training	4 days
	All other activities	2 days
BERRIES		
Raspberries	Harvesting	8 days
	Hand-set/hand-line irrigation-related activities involving foliage contact	7 days
	Training, tying	7 days
	All other activities	12 hours
Strawberries (field grown)	Hand-set/hand-line irrigation-related activities involving foliage contact	9 days
	Harvesting	8 days
	All other activities	12 hours

CAPTAN 480 SC

RE-ENTRY INTERVALS (CONT'D)

Crop	Activity	REI ¹ and/or PHI
FRUIT CROPS (CONT'D)		
BERRIES (CONT'D)		
Highbush Blueberries, Blackberries, Loganberries	Harvesting	8 days
	Hand-set/hand-line irrigation-related activities involving foliage contact	6 days
	Training, tying (full foliage)	5 days
	All other activities	12 hours
Lowbush Blueberries	Harvesting	8 days
	Hand-set/hand-line irrigation-related activities involving foliage contact	6 days
	All other activities	3 days
GREENHOUSE AND OUTDOOR ORNAMENTAL CROPS		
Greenhouse Ornamentals ² (non-cut flower): Foliar applications to Aster, Camellia, Carnation, Chrysanthemum, Dahlia, Lilac, Rose and Tulip	All activities	12 hours
Soil and greenhouse bench treatment (soil treatment): seedlings or transplants of Roses and other flowers, Shrubs, Trees, Lawn Seedbeds, Beans, Celery, Crucifers, Eggplants, Peas, Tomatoes, Pepper		
Outdoor Ornamentals: Foliar (cut flower)	Harvesting, disbudding, hand pruning (full foliage)	7 days
	All other activities	1 day
Outdoor Ornamentals: Foliar (non-cut flower)	Harvesting, disbudding, hand pruning (full foliage)	4 days
	All other activities	12 hours
TURF		
Sod Farms	All activities	12 hours
Golf Courses	All activities	Until sprays have dried

¹ REIs longer than 12 hours apply to hand labour tasks.

² Only applies to non-cut flowers, as there is a label statement that will prohibit the use on cut flowers.

CUSTODIA®

A multi-mode-of-action fungicide offering preventative and curative protection of the flag leaf against major leaf diseases.



ACTIVE INGREDIENT

Tebuconazole 200 g/L and Azoxystrobin 120 g/L = SC

APPLICATION RATES

Rate: 190–250 ml/ac

PACKAGING & ACRES TREATED

Case: 2 x 10.08 L jugs

Acres Treated: 40–53 ac/jug

WATER VOLUME

Ground: 40 L/ac (10 US gal/ac)

Aerial: 20 L/ac (5 US gal/ac)

RAINFASTNESS

Avoid applying when heavy rainfall is in the forecast.

REGISTERED CROPS

- Barley
- Oats
- Soybeans
- Wheat (spring, winter)

KEY DISEASES CONTROLLED

- Leaf Rust
- Stem Rust
- Stripe Rust
- Septoria Leaf Blotch
- Tan Spot
- Net Blotch
- Spot Blotch

HOW IT WORKS

CUSTODIA® is a broad-spectrum, preventative fungicide with systemic and curative properties recommended for the control of many important plant diseases. CUSTODIA® may be applied as a foliar spray in spray programs or in tank mixes with other crop protection products. All applications must be made according to the use directions that follow.

CUSTODIA®

CROP STAGING

Crop	Rate	Diseases	Application Timing
Wheat (spring, winter)	190–250 ml/ac	Leaf Rust, Stem Rust, Stripe Rust, <i>Septoria</i> Leaf Blotch, Tan Spot	Apply CUSTODIA® at the very early stages of disease development.
Barley		Net Blotch, Spot Blotch, Leaf Rust, Stem Rust, Stripe Rust, <i>Septoria</i> Leaf Blotch, Tan Spot	Use of the higher rate should be considered when weather conditions are conducive to heavy disease development or when heavy disease pressure is present.
Soybeans		Asian Soybean Rust, Frog-Eye Leaf Spot	
Oats	190 ml/ac	Crown Rust, Stem Rust, <i>Septoria</i> Leaf Blotch	Apply CUSTODIA® at the very early stages of disease development.

REGISTERED AND SUPPORTED TANK MIXES†

Manipulator™

† Refer to page 139 for PRD tank-mixing directives.

MIXING INSTRUCTIONS*

1. Fill sprayer tank ½ full of water.
2. Start sprayer tank agitation.
3. Add the required amount of CUSTODIA®.
4. If applicable, add any required adjuvants or surfactants for tank-mix partners.
5. Complete filling tank with water.

* Use a 50-mesh (or coarser) filter screen.

NOTE: If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).

CROP ROTATIONS

No restrictions.

PRE-HARVEST INTERVALS

- Forage, Hay: 6 days
- Soybeans: 20 days
- Mature Grains: 36 days

CUSTODIA®

RE-ENTRY INTERVAL (REI)

12 hours

GRAZING RESTRICTIONS

Do not allow livestock to graze or feed green forage to livestock prior to 6 days after treatment. Straw cut after harvest may be fed or used for bedding.

STORAGE

Do not freeze.

Please note that there has been a re-evaluation of Tebuconazole by the PRD; the total seasonal rate is limited to a maximum of 136 g a.i./ha/year, except for those crops where the yearly total rate is currently below 136 g a.i./ha.

QUICK TIPS:

CUSTODIA® should be applied at flag leaf for optimal leaf disease control. Pathogens coverage is key; do not use less than recommended water volumes.

For Fusarium Head Blight control, we would recommend an application of SORATEL® fungicide at full head emergence after CUSTODIA® at flag leaf.

For resistance management, CUSTODIA® contains Group 3 and 11 fungicides. When possible, rotate the use of CUSTODIA® or other Group 3 and 11 fungicides with different groups that control the same pathogens.

FOLPAN® 80 WDG

A water-dispersible granular fungicide that delivers exceptional protection against the most common and economically damaging diseases in grapes, apples and other horticultural crops. Lower rate now registered for apple Scab control.



ACTIVE INGREDIENT

80% Folpet = WDG

APPLICATION RATES

Rate: 0.5–2 kg/ac

PACKAGING & ACRES TREATED

Case: 2 x 5 kg packs

Acres Treated: 2.5–10 ac/pack

WATER VOLUME

Ground: 400–1200 L/ac
(100–317 US gal/ac)

Aerial: Do not apply by air.

RAINFASTNESS

Avoid applying when heavy rainfall is in the forecast.

REGISTERED CROPS

- Apples
- Azalea
- Carnation
- Chrysanthemum
- Crabapples
- Field Cucumbers
- Field Tomatoes
- Grapes
- Iris
- Marigold
- Melons
- Poinsettia (greenhouse)
- Pumpkins
- Snapdragon
- Squash
- Strawberries
- Zinnia

KEY DISEASES CONTROLLED

- Alternaria Leaf Spot
- Anthracnose
- Black Rot
- Brooks Spot
- Dead Arm
- Didymellina Leaf Spot
- Downy Mildew
- Fly Speck
- Fruit Rot
- Grey Mould
- Leaf Spot
- Phythium Root Rot
- Powdery Mildew
- Scab
- Septoria Leaf Spot
- Sooty Blotch
- Stem Rot

HOW IT WORKS

Multi-site-contact mode of action with protective ability. Use in a regularly scheduled maintenance program.

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FOLPAN® 80 WDG

APPLICATION TIMING AND CROP STAGING

Crop	Diseases	Timing
Apples, Crabapples	Alternaria Leaf Spot, Black Rot, Brooks Spot, Fly Speck, Scab, Sooty Blotch	Apply in a regular protective schedule from green tip up until harvest. Do not apply more than 6 applications per season. See label for additional precautions.
Cranberries	Fruit Rot	Apply when 5% of blossoms are open. Repeat 10–14 days later when 50–75% of blossoms are open.
Grapes	Dead Arm	Apply when new shoots are 1–2 inches long and repeat when growth is 4–6 inches long.
	Black Rot, Downy Mildew	Apply just before bloom, just after bloom and in first cover spray. For downy mildew, an additional application 2–3 weeks later may be needed.
	Powdery Mildew	Apply in a tank-mix with Kumulus® DF at first sign of mildew and repeat after 10 days.
Field Cucumbers, Melons, Pumpkins, Squash	Anthrachnose, Downy Mildew	Apply when first true leaves appear. Repeat at 7-day intervals until crop is harvested.
Field Tomatoes	Anthrachnose	Apply during first bloom and repeat at 7-day intervals until harvest.
Strawberries	Grey Mould, Fruit Rot, Leaf Spot	Apply before first infection and repeat at 7-day intervals to protect crop until harvest.
Azalea, Carnation, Chrysanthemum, Iris, Marigold, Poinsettia, Snapdragon, Zinnia	Blight, Phythium Root Rot, Stem Rot, Alternaria Leaf Spot, Septoria Leaf Spot, Didymellina Leaf Spot, Anthracnose (depending on ornamental)	Generally, apply when ornamental emerges and repeat at regular intervals. Consult label for timing on specific disease and ornamental.

FOLPAN® 80 WDG

REGISTERED AND SUPPORTED TANK MIXES†

Kumulus® DF

† Refer to page 139 for PRD tank-mixing directives.

MIXING INSTRUCTIONS

1. Fill spray tank nearly full.
2. Start sprayer agitation.
3. Pour recommended amount of FOLPAN® 80 WDG on surface of water.
Fungicide can be premixed in a bucket ½ filled with water. Mix can be poured through screen into nearly filled spray tank.
4. Finish filling tank.
5. Keep agitator running during filling and spraying.

NOTES:

Fungicide can be premixed in a bucket ½ filled with water. Mix can be poured through screen into nearly-filled spray tank.

If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).

CROP ROTATIONS

No restrictions

STORAGE

May be stored at any temperature

GRAZING RESTRICTIONS

No restrictions

RE-ENTRY & PRE-HARVEST INTERVALS (REI/PHI)

NOTE: Any activity not specifically listed has a REI/PHI of 12 hours.

Crop	Activity	REI &/ or PHI
FRUIT CROPS		
Apples, Crabapples	Harvesting (hand, mechanical)	1 day
	Hand thinning	6 days
Grapes	Hand turning and girdling (table/raisin grapes only)	35 days
	Hand harvesting, training/tying, leaf pulling by hand	3 days
	Mechanical harvesting	1 day
Melons	Hand-set/hand-line irrigation-related activities involving foliar contact	22 days
	Harvesting (hand, mechanical), training, tying, turning	11 days

FOLPAN® 80 WDG

RE-ENTRY & PRE-HARVEST INTERVALS (REI/PHI) (CONT'D)

NOTE: Any activity not specifically listed has a REI/PHI of 12 hours.

Crop	Activity	REI &/ or PHI
FRUIT CROPS (CONT'D)		
Strawberries	Hand harvesting	11 days
	Mechanical harvesting	1 day
Cranberries	Harvesting (hand, mechanical)	30 days
	Scouting	4 days
VEGETABLE CROPS		
Cucumber, Squash	Hand-set/hand-line irrigation-related activities involving foliar contact	22 days
	Harvesting (hand, mechanical), training, tying, turning	11 days
Tomatoes (for processing)	Mechanical harvesting	1 day
	Scouting	2 days
	Hand-set/hand-line irrigation-related activities involving foliar contact	22 days
Tomatoes (not for processing)	Hand harvesting, training, tying	16 days
	Mechanical harvesting, scouting	1 days
	Hand-set/hand-line irrigation-related activities involving foliar contact	22 days
ORNAMENTALS GROWN FOR CUT FLOWER PRODUCTION		
Carnation, Chrysanthemum, Iris, Snapdragon, Zinnia	Hand harvesting, hand pruning, disbudding (greenhouse)	48 days
	Hand harvesting, hand pruning, disbudding (outdoor)	16 days
	Hand-set/hand-line irrigation-related activities involving foliar contact (outdoor)	8 days
ORNAMENTALS NOT GROWN FOR CUT FLOWER PRODUCTION		
Snapdragon, Carnation, Chrysanthemum, Iris, Marigold, Zinnia	Hand-set/hand-line irrigation-related activities involving foliar contact (greenhouse and outdoor)	13 days
Poinsettia	All activities	12 hours

MAXENTIS®

Provides protection against disease in cereals, soybeans and lowbush blueberries. Features two distinct elite modes of action (Groups 3 & 11) for resistance management and long-lasting systemic activity.



POWERED BY
Asorbital®
FORMULATION TECHNOLOGY

ACTIVE INGREDIENT

Azoxystrobin 120 g/L,
Prothioconazole 90 g/L as an EC

APPLICATION RATES

Rate: 253–452 ml/ac

PACKAGING & ACRES TREATED

Case: 2 x 8.45 L jugs

Drum: 118.1 L

Acres Treated: 40–66 ac/case;
280–467 ac/drum

WATER VOLUME

Ground: 80 L/ac (20 US gal/ac)

Aerial: 20 L/ac (5 US gal/ac)

RAINFASTNESS

Avoid applying when rain is forecast.

REGISTERED CROPS*

- Barley
- Lowbush Blueberries (Eastern Canada)
- Oats
- Soybeans
- Wheat

*See label for the complete list of registered crops as well diseases controlled and rates for each crop.

KEY DISEASES CONTROLLED AND APPLICATION RATES

Crop	Diseases	Rate
Barley	Spot Blotch, Barley Scald, Net Blotch, Stripe Rust, Septoria Leaf Spot (suppression)	271–452 ml/ac
Lowbush Blueberries	Rust (suppression)	253 ml/ac
Oats	Crown Rust	256 ml/ac
Soybeans	White Mould (<i>Sclerotinia</i>)	422 ml/ac
Wheat	Spot Blotch, Stripe Rust, Septoria Leaf Spot (suppression), Tan spot	271–452 ml/ac

See product label for all registered crops and application timing.

MAXENTIS®

MIXING INSTRUCTIONS

1. Fill sprayer tank $\frac{3}{4}$ full of water.
2. Start sprayer tank agitation.
3. Add the required amount of MAXENTIS®.
4. If applicable, add any required adjuvants or surfactants for tank-mix partners.
5. Complete filling tank with water.

NOTE: If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).

When mixing MAXENTIS® with ARROW ALL IN® and Glufosinate the tank mixing order is: ARROW ALL IN® → Glufosinate → MAXENTIS®

When mixing MAXENTIS® and Glyphosate the order is: MAXENTIS® → Glyphosate

REGISTERED AND SUPPORTED TANK MIXES

None registered

CROP ROTATIONS

No restrictions

GRAZING RESTRICTIONS

Forage, hay: 30 days

Grazing or green feed: 6 days

STORAGE

Do not freeze.

RE-ENTRY INTERVAL (REI)

24 hours

PRE-HARVEST INTERVALS

- Lowbush Blueberries: 30 days
- Oats: 30 days
- Soybeans: 20 days
- Wheat, Barley: 45 days

*See label for the complete list of pre-harvest intervals for each registered crop.

QUICK TIPS:

Environmental conditions are a major driver of disease pressure and severity. Under high disease pressure conditions a rate of MAXENTIS® at the upper end of the rate range is recommended. When temperatures are above 25°C we recommend application in the evening.

ORIOUS® 430 SC

Your tool of choice—ORIOUS® 430 SC offers long-lasting, broad-spectrum protection against the most dangerous cereal leaf and head diseases in wheat, barley and oats, and the flexibility of a wider application window.



ACTIVE INGREDIENT

Tebuconazole 430 g/L = SC

APPLICATION RATES

Rate: 89–118 ml/ac

PACKAGING & ACRES TREATED

Case: 2 x 9.44 L jugs

Acres Treated: 80–100 ac/jug

WATER VOLUME

Ground: 40 L/ac (10 US gal/ac)

Aerial: 20 L/ac (5 US gal/ac)

RAINFASTNESS

Avoid applying when heavy rainfall is in the forecast.

REGISTERED CROPS

- Barley
- Oats
- Wheat (spring, winter)

KEY DISEASES CONTROLLED

- Fusarium Head Blight (suppression)
- *Septoria* Glume Blotch
- Rusts (leaf, stem, stripe)
- *Septoria* Leaf Blotch
- Tan Spot
- Powdery Mildew
- Net Blotch
- Spot Blotch
- Scald

HOW IT WORKS

ORIOUS® 430 SC foliar fungicide can be applied as a post-emergent treatment in wheat (spring, winter), barley and oats for the suppression of Fusarium Head Blight and control of foliar diseases.

CROP STAGING

Crop	Diseases	Application Timing	Rate
Wheat (spring, winter)	Fusarium Head Blight (suppression), <i>Septoria</i> Glume Blotch (control), Powdery Mildew	For optimum suppression of Fusarium Head Blight and control of <i>Septoria</i> Glume Blotch, apply ORIOUS® 430 SC foliar fungicide within the time period from 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. Spray coverage is essential: Ensure thorough coverage of all wheat heads.	118 ml/ac

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ORIOUS® 430 SC

CROP STAGING (CONT'D)

Crop	Diseases	Application Timing	Rate
Wheat (spring, winter)	Rusts (leaf, stem, stripe), <i>Septoria</i> Leaf Blotch, Tan Spot	Apply ORIOUS® 430 SC foliar fungicide to leaf foliage at the first sign or very early stage of disease, especially if weather conditions are conducive to disease development, up to the end of the flowering stage. Consider using the higher rate when weather conditions are conducive to heavy disease development.	89–118 ml/ac
Barley	Net Blotch, Spot Blotch, Scald, Rusts (leaf, stem and stripe), <i>Septoria</i> Leaf Blotch, Powdery Mildew	Apply ORIOUS® 430 SC foliar fungicide at the very early stages of disease development. Consider using the higher rate when weather conditions are conducive to heavy disease development.	89–118 ml/ac
Oats	Stem Rust, Crown Rust	Apply ORIOUS® 430 SC foliar fungicide at the very early stages of disease development.	89 ml/ac

QUICK TIPS:

ORIOUS® 430 SC should only be applied when the risk of Fusarium Head Blight infection is high. Consult your local extension authority regarding the need for ORIOUS® 430 SC. Head blight is extremely difficult to control. Fusarium Head Blight outbreaks occur when the weather is warm and wet at the flowering to soft dough stages.

Timing of application is critical: For optimum suppression of Fusarium Head Blight and control of *Septoria* Glume Blotch, apply ORIOUS® 430 SC Foliar fungicide within the time period from 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.

Spray coverage is essential: Ensure thorough coverage of all wheat heads.

ORIOUS® 430 SC

REGISTERED AND SUPPORTED TANK MIXES†

- Agral® 90¹
- Ag-Surf®¹
- BADGE®
- SORATEL®

† Refer to page 139 for PRD tank-mixing directives.

¹ORIOUS® 430 SC foliar fungicide is recommended to be used with a registered non-ionic surfactant.

MIXING INSTRUCTIONS*

1. Fill the spray tank $\frac{3}{4}$ full with water.
2. Add the required amount of ORIOUS® 430 SC foliar fungicide into the sprayer.
3. Agitate until the fungicide is thoroughly mixed.
4. Continue agitation and add the required amount of the tank-mix partner.
5. Continue agitation while adding the required amount of recommended registered non-ionic surfactant at 0.125% v/v.
6. Complete filling the tank to the desired level with water.
7. Upon completion of spraying, thoroughly flush tank, boom, hoses, and in-line and nozzle screens with clean water to avoid possible injury to other crops.
8. Repeat sprayer cleanout process using an appropriate spray system cleaner.

* Use a 50-mesh (or coarser) filter screen.

NOTE: If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).

SURFACTANT RATE

Non-ionic surfactant (NIS) @ 0.125% v/v

PRE-HARVEST INTERVALS

Wheat, Barley, Oats: 36 days

RE-ENTRY INTERVAL (REI)

12 hours

GRAZING RESTRICTIONS

Do not allow livestock to graze or feed green forage to livestock prior to 6 days after treatment. Straw cut after harvest may be fed or used for bedding.

CROP ROTATIONS

No restrictions

STORAGE

Do not freeze.

Please note that there has been a re-evaluation of Tebuconazole by the PRD; the total seasonal rate is limited to a maximum of 136 g a.i./ha/year, except for those crops where the yearly total rate is currently below 136 g a.i./ha.

SORADUO™

Advanced disease protection powered by Asorbital® Formulation Technology. SORADUO™ provides proven Fusarium Head Blight protection in wheat and barley.



POWERED BY
Asorbital
FORMULATION TECHNOLOGY

ACTIVE INGREDIENT

Prothioconazole 250 g/L = EC,
Tebuconazole 430 g/L = SC

APPLICATION RATES

Rate: 121–162 ml/ac SORADUO™ A
+ 70–94 ml/ac SORADUO™ B

PACKAGING & ACRES TREATED

Case includes:

- 1 × 9.71 L jug of SORADUO™ A (Prothioconazole)
- 1 × 5.65 L jug of SORADUO™ B (Tebuconazole)

Acres Treated: 60–80 ac/case

WATER VOLUME

Ground: 40–80 L/ac
(10–20 US gal/ac)
Aerial: 20 L/ac (5 US gal/ac)

RAINFASTNESS

Avoid application if heavy rainfall is in the forecast.

REGISTERED CROPS AND APPLICATION TIMING

Crop	Disease	Rate	Timing
Barley	For suppression of Fusarium Head Blight (<i>Fusarium Head Blight spp.</i>)	162 ml/ac SORADUO™ A + 94 ml/ac SORADUO™ B	70–100% head emergence to 3 days after full head emergence
Wheat (spring, winter)		121–162 ml/ac SORADUO™ A + 70–94 ml/ac SORADUO™ B	75% head emergence to 50% main stem flower

Applications per year: Maximum of one (1)

REGISTERED AND SUPPORTED TANK MIXES†

Optional: Non-ionic surfactant (NIS) @ 0.125% v/v

† Refer to page 139 for PRD tank-mixing directives.

MIXING INSTRUCTIONS

1. Fill sprayer tank ½ full of water.
2. Start sprayer tank agitation.
3. Add the required amount of SORADUO™ B.
4. Add required amount of SORADUO™ A.
5. If applicable, add any required adjuvants or surfactants for tank-mix partners.
6. Complete filling tank with water with agitation on.

NOTE: If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).

SORADUO™

KEY BENEFITS

- Proven Fusarium Head Blight protection in wheat and barley
- Absorbital® Formulation Technology helps to deliver uniform coverage for consistent protection
- Simple choice without the complication of grower programming
- Application flexibility
- Performance over a wide range of conditions

HOW IT WORKS

SORADUO™ is a combination two triazole fungicides including one that features Absorbital® Formulation Technology for broad-spectrum system activity plus long-lasting foliar protection.

CROP ROTATIONS

No restrictions

GRAZING RESTRICTIONS

6 days

PRE-HARVEST INTERVAL

36 days

STORAGE

Do not freeze.

RE-ENTRY INTERVAL (REI)

24 hours

Please note that there has been a re-evaluation of Tebuconazole by the PRD; the total seasonal rate is limited to a maximum of 136 g a.i./ha/year, except for those crops where the yearly total rate is currently below 136 g a.i./ha.

NEW

SORADUO™ ALL IN

Now available in a Bulk ALL IN formulation.

APPLICATION RATES

- Rate: 324 ml/ac

PACKAGING AND ACRES TREATED:

- Drum: 104.0 L
- Acres Treated: 320 ac/drum

**CLICK
HERE**

Click here for more information on SORADUO™ ALL IN



QUICK TIPS:

Fusarium Head Blight outbreaks in wheat and barley occur when the weather is warm and wet at head emergence and flowering. Timing of application is critical when providing protection against Fusarium Head Blight.

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SORATEL®

Advanced disease protection powered by Asorbital® formulation technology. With a flexible application window, SORATEL® provides proven disease protection across a wide variety of crops, including Fusarium Head Blight in wheat and Gibberella Ear Rot in corn.



POWERED BY
Asorbital®
FORMULATION TECHNOLOGY

ACTIVE INGREDIENT

Prothioconazole 250 g/L = EC

APPLICATION RATES

Rate: 160–320 ml/ac (standard rate: 240 ml/ac)

PACKAGING & ACRES TREATED

Case: 2 x 9.6 L jugs

Acres treated: 30–60 ac/jug (standard rate: 40 ac/jug)

WATER VOLUME

Ground: Minimum 40 L/ac (10 US gal/ac)

Aerial: Minimum 20 L/ac (5 US gal/ac)

RAINFASTNESS

Avoid application if heavy rainfall is in the forecast.

REGISTERED CROPS

- Barley
- Low-Growing Berries Except Strawberries (crop sub-group 13–07h)
- Borage
- Brassica Carinata
- Bushberries (crop sub-group 13b)
- Canola
- Crambe
- Corn
- Field Peas
- Flax (linseed)
- Oats
- Oriental Mustard
- Peanuts
- Rapeseed
- Safflower
- Soybeans
- Sugarbeets
- Sunflower
- Wheat (spring, winter)
- Plus Other Small Grains

HOW IT WORKS

SORATEL® is a triazolinthione, broad-spectrum systemic fungicide with Asorbital® Formulation Technology. This technology, unique to ADAMA, includes a built-in adjuvant which enhances leaf penetration and increases effectiveness.

KEY DISEASES CONTROLLED

Crop	Diseases	Rate	Timing
Cereals			
Barley	Fusarium Head Blight ^s	240–320 ml/ac	70–100% head emergence
	Net Blotch, Scald, Spot Blotch	160–240 ml/ac	First sign of disease
Oats	Crown Rust	240 ml/ac	First sign of disease
Wheat (spring, winter)	Fusarium Head Blight ^s , Glume Blotch	240–320 ml/ac	75% head emergence–50% main stem flower
	Leaf Rust, Speckled Leaf Blotch, Tan Spot	240 ml/ac	First sign of disease
Oilseeds			
Canola	Sclerotinia Stem Rot	240–280 ml/ac	20–50% bloom
Soybeans			
Soybeans	Asian Soybean Rust, Frog-Eye Leaf Spot	160 ml/ac	First sign of disease
Corn			
Corn (field, sweet and popcorn, including seed production)	Eyespot, Gibberella Ear Rot ^s , Grey Leaf Spot, Northern Corn Leaf Blight, Rust	240 ml/ac	First sign of disease Apply from the development stage of corn between full silk emergence (BBCH 63) to early silk browning (BBCH 67)

For a complete list of registered crops, diseases, and application rates, consult the label.

^s Suppression

SORATEL®

Crop	Diseases	Rate	Timing
Berries			
Bushberries (crop sub-group 13b): Aronia Berry, Blueberry (highbush, lowbush), Chilean Guava, Cranberry (highbush), Currant (black, buffalo, native, red), Elderberry, European Barberry, Gooseberry, Honeysuckle (edible), Huckleberry, Jostaberry, Juneberry (Saskatoon berry), Lingonberry, Salal, Sea Buckthorn; Cultivars, Varieties, and/or Hybrids of these.	<i>Septoria</i> Leaf Spot ⁵	240 ml/ac (600 ml/ha)	First sign of disease
	Leaf Rust ⁵ , Valdensinia Leaf Spot ¹	300 ml/ac (760 ml/ha)	
	Mummy Berry ¹	240–320 ml/ac (600–800 ml/ha)	1st application: at early bloom for fruit rot 2nd application: 5–10 days later after first application
Low-Growing Berries Except Strawberries (crop sub-group 13–07h): Bearberry, Bilberry, Blueberry (lowbush), Cloudberry, Cranberry, Lingonberry, Muntries, Partridgeberry, Cultivars, Varieties, and/or Hybrids of these.	Fruit Rot	280 ml/ac (700 ml/ha)	

For a complete list of registered crops, diseases, and application rates, consult the label.

⁵Suppression

¹Blueberries only

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.

SORATEL®

PRE-HARVEST AND RE-ENTRY INTERVALS (REI)

- Bushberries:
 - Harvesting: 7 days
 - Hand-line irrigation: 3 days
- Corn (field, popcorn): 14 days
- Corn (sweet/seed):
 - Mechanical harvesting: 14 days
 - Hand harvesting/detasseling: 20 days
- Soybeans: 20 days
- Barley, Oats, Wheat (spring, winter): 30 days
- Borage, *Brassica carinata*, Canola, Crambe, Flax, Oriental Mustard, Rapeseed: 36 days
- Low-Growing Berries (except strawberries): 45 days

All other activities not listed (all crops): 24 hours

GRAZING RESTRICTIONS

Do not graze livestock within 30 days of spraying.

STORAGE

Do not freeze.

REGISTERED AND SUPPORTED TANK MIXES†

- Coragen®
- Decis®
- ORIOUS® 430 SC
- SILENCER® 120 EC

† Refer to page 139 for PRD tank-mixing directives.

MIXING INSTRUCTIONS

1. Fill sprayer tank ½ full of water.
2. Start sprayer tank agitation.
3. Add the required amount of SORATEL®.
4. If applicable, add any required adjuvants or surfactants for tank-mix partners.
5. Complete filling tank with water with agitation on.

NOTE: If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).

KEY BENEFITS

- Technologically advanced formulation developed by and unique to ADAMA
- 5% higher efficacy vs. competitive products shown in Canadian trials
- Improved leaf penetration into the plant, improved efficacy
- Preventative, curative and eradicated control of multiple diseases in multiple crops
- Wide window of application
- No need for additional surfactants

VANTANA™

A protective, broad-spectrum fungicide used in a variety of fruit and vegetable crops.

This Group 29 fungicide is a very important resistance management tool with activity on the hardest-to-control fungal diseases.



ACTIVE INGREDIENT

Fluazinam 500 g/L = SC

APPLICATION RATES

Rate: 162–906 ml/ac

PACKAGING & ACRES TREATED

Case: 2 x 10 L jugs

Acres Treated: 11–62 ac/jug

WATER VOLUME

Ground: Varies with the crop.

Refer to the label for more details.

Aerial: Minimum of 18.2 L/ac

RAINFASTNESS

Avoid application when heavy rainfall is forecast.

REGISTERED AND SUPPORTED CROPS

- Apples
- Blueberries (highbush, lowbush)
- Bulb Onion
- Carrots
- Currant
- Dry-Shelled Beans
- Elderberry
- Edible-Podded Legume Vegetables (except pea)
- Field Peppers
- Ginseng
- Gooseberry
- Huckleberry
- Head and Stem Brassica (crop sub-group 5A)
- Leafy Brassica Greens (crop sub-group 5B)
- Potatoes
- Soybeans

For a full list of registered crops, please refer to the label.

HOW IT WORKS

VANTANA™ works by inhibiting fungal adenosine triphosphate (ATP) production in the mitochondria (impairing energy production).

Active on a wide range of diseases, VANTANA™ is a protective fungicide that inhibits the germination of fungal spores.

CROP ROTATIONS

Areas treated with VANTANA™ may be replanted with potatoes and dry shelled beans as soon as practical after the last application. Other root crops and leafy vegetables can be planted 30 days after the last application.

All other crops can be planted 70 days after the last application.

GRAZING RESTRICTIONS

Do not feed treated foliage to livestock.

STORAGE

Do not freeze.

APPLICATION TIMING AND KEY DISEASES CONTROLLED BY CROP

Crop	Diseases	Rate	Timing
FRUITS			
Apples	Cedar Apple Rust, Apple Scab, Flyspeck, Sooty Blotch	304–405 ml/ac (750–1,000 ml/ha)	Foliage application as a preventative measure before disease occurs
	Black Rot ⁵ , Brooks Spot ⁵ , Quince Rust ⁵	405 ml/ac (1,000 ml/ha)	Before disease occurs, and on a 7-day schedule thereafter
Blueberries (lowbush)	Valdensinia Leaf Spot	162–324 ml/ac (400–800 ml/ha)	At early bloom or at first symptoms in fruiting fields and at an equivalent time in sprout fields
Blueberries (highbush, lowbush)	Mummyberry ⁵ , Phomopsis Fruit Rots ⁵ , Fruit Anthracnose ⁵	906 ml/ac (2,240 ml/ha)	At bud break and on a 7–10 day interval thereafter until petal fall
Currant, Elderberry, Gooseberry, Huckleberry	Fruit Anthracnose ⁵		
VEGETABLES AND DRY BEANS			
Bulb Onion	Purple Blotch, Botrytis Leaf Blight	469 ml/ac (116 ml/ha) (584 g)	When conditions are favourable for disease development or when first disease symptoms appear
Carrots	White Mould	469 ml/ac	First sign of disease symptoms. All subsequent applications are to be applied at 7-day intervals
	Alternaria Leaf Blight		
Dry-shelled beans	White Mould	243–405 ml/ac (600–1,000 m/ha)	10 to 30% bloom
	Anthracnose		If needed, a second application may be applied 7–10 days later (for white mould) or 10–14 days later (for anthracnose)
Edible-Podded Legume Vegetables (except pea)	White Mould		At first bloom to 10% bloom
Field Peppers	Phytophthora Blight	688 ml/ac	Being at transplant by soil drench or foliar application. Subsequent applications should be foliar

⁵Suppression

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APPLICATION TIMING AND KEY DISEASES CONTROLLED BY CROP (CONT'D)

Crop	Diseases	Rate	Timing
VEGETABLES AND DRY BEANS (CONT'D)			
Potatoes	Late Blight	162 ml/ac (400 ml/ha)	When plants are 15–20 cm tall or when conditions are favourable for disease development
	White Mould	162–242 ml/ac (400–600 ml/ha)	At full bloom
Soybeans	White Mould	356–473 ml/ac (880–1,170 ml/ha)	At the R1 (early bloom) to R2 (full bloom) stage of development
	White Mould ⁵	178 ml/ac (440 ml/ha)	If needed, 10 to 14 days later at early pod formation (R3)
Leafy Brassica Greens (crop sub-group 5b)	Clubroot	1.17 L in 202 L per acre (2.9 L in 500 L of water/ha)	Pre-transplant
Head and Stem Brassica (crop sub-group 5a), Leafy Brassica Greens (crop sub-group 5b)		Mix 50 ml with water to make a 100 L solution.	At transplant Apply 100 ml of solution per plant immediately after transplanting
Ginseng	Rhizoctonia Root Rot	486 ml/ac (1,200 ml/ha)	At seed and continued on a 14-day interval
	Alternaria Blight, Botrytis Blight		When disease first appears or when conditions are favourable for disease development Repeat applications on a 7–14 day interval

⁵Suppression

MIXING INSTRUCTIONS

1. Fill sprayer tank ½ full of water.
2. Start sprayer tank agitation.
3. Add the required amount of VANTANA™.
4. If applicable, add any required adjuvants or surfactants for tank-mix partners.
5. Complete filling tank with water.

NOTE: If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).

REGISTERED AND SUPPORTED TANK MIXES

None registered

CROP ROTATIONS

Areas treated with VANTANA™ may be replanted with potatoes and dry shelled beans as soon as practical after the last application. Other root crops and leafy vegetables can be planted 30 days after the last application. All other crops can be planted 70 days after the last application.

PRE-HARVEST INTERVALS

Soybeans: DO NOT apply after growth stage R3.

Bulb Onion, Carrots: 7 days

Edible-Podded Legume Vegetables (except peas), Potatoes: 14 days

Apples: 28 days

Blueberries (highbush, lowbush), Currant, Dry-Shelled Beans,

Elderberry, Field Peppers, Ginseng, Gooseberry, Huckleberry, Leafy

Brassica Greens (Crop sub-group 5B): 30 days

Head and Stem Brassica (Crop sub-group 5A): 65 days

RE-ENTRY INTERVALS (REI)

Bulb Onion: 3 days

All other crops: 24 hours

QUICK TIPS:

For optimal efficacy VANTANA™ requires good coverage, best achieved with higher water volumes. Actual water volumes will vary with the crop, please refer to the label for more specific details.



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CROP ENHANCEMENT

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For products that were not registered prior to the printing of this guide, label updates and our latest innovative solutions, please scan here to discover more details.



PLANT GROWTH REGULATOR

.....

BREVIS™ 150 SC **NEW**131



BREVIS™ 150 SC

NEW

Get the Royal Treatment! New Innovative Active Ingredient – Metamitron – Now Available in Canada providing consistent fruitlet thinning in both apples and pears.



ACTIVE INGREDIENT

Metamitron 150 g/L = SC

APPLICATION RATES

1.12–2.24 L/ha; 0.45–0.91 L/ac

PACKAGING AND ACRES TREATED

Case: 2 x 9.0 L jug

Acres Treated: 19–25 acres/case

WATER VOLUME

Ground: 500–1500 L/ha; 200–600 L/ac

RAINFASTNESS

Avoid when heavy rain is in the forecast.

REGISTERED CROPS

• Apples

• Pears

WHAT IS BREVIS™ 150 SC?

BREVIS™ 150 SC is a crop enhancer that provides consistent fruitlet thinning in apples and pears, increasing the marketability of your fruit while cutting down on hand thinning. Powered by the novel active ingredient Metamitron, BREVIS™ 150 SC offers greater application flexibility, making it the ideal choice for some fruit growers.

HOW IT WORKS

BREVIS™ 150 SC generates a temporary reduction in carbohydrates for the tree. The resulting competition between fruitlets causes a natural fall of lateral fruits while preserving the dominant and/or king fruit.

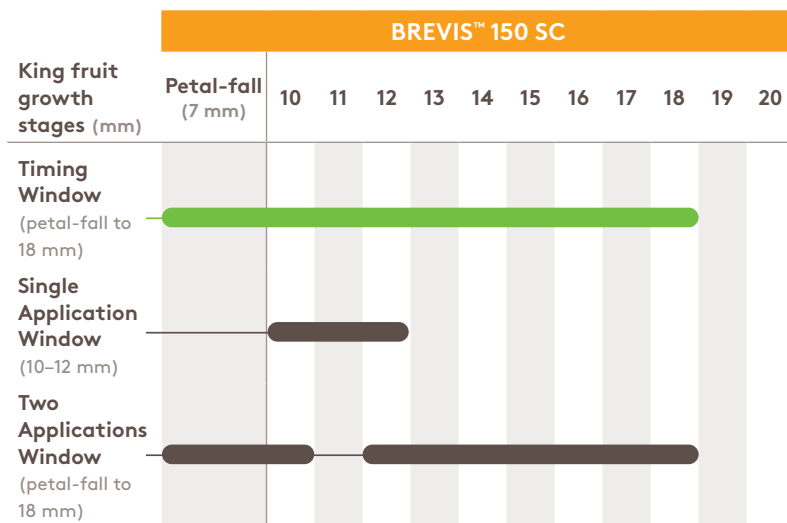
BREVIS™ 150 SC APPLICATION GUIDELINES

Orchard Thinning Propensity	Starting Rate L/ha (L/ac)
	East
Easy-to-thin	1.2 (0.49)
Medium-to-thin	1.8 (0.73)
Hard-to-thin	2.24 (0.91)

BREVIS™ 150 SC

NEW

APPLICATION TIMING



Apply BREVIS™ 150 SC as a standalone thinner from petal fall up to 16–18 mm fruitlet size. For optimal results consider using two applications of BREVIS™ 150 SC. First application should be made in the early millimetre staging with a second pass of BREVIS™ 150 SC 5–10 days later. A minimum retreatment interval of 5 days must be followed.

Applications should be guided by a tree carbon model like BreviSmart™ to adjust rates based on weather conditions.

MIXING INSTRUCTIONS

1. Fill the spray tank with ½ the required amount of water and engage agitation.
2. Add the required amount of BREVIS™ 150 SC. Ensure that the BREVIS™ 150 SC is completely dispersed.
3. Continue filling tank until 90% full.

4. Fill sprayer with water, maintaining good agitation.
5. After any break in spraying operations, agitate thoroughly before spraying again.

NOTE: If tank-mixing, please reference the label of the partner for specific mixing order or follow WAMLEGS or WALES for proper mixing protocol (detailed on page 140 of this guide).

RE-ENTRY INTERVAL (REI)

Apples and Pears:

- Eastern Canada all activities: 12 hours

PRE-HARVEST INTERVALS

72 days

STORAGE

Do not freeze.

ADJUVANT RECOMMENDATION

None

QUICK TIPS

BreviSmart™ is an ADAMA modeling tool to guide rate determination. Access via Brevismart.adama.com.



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For emergency medical help or health/safety concerns, call ProPharma immediately at 1-877-250-9291 (24 hours a day).

In the event of a spill, leak or fire, call INFOTRAC immediately at 1-800-535-5053 (24 hours a day).

AERIAL APPLICATION CHART

	ADAMA PRODUCT NAME	AERIAL APPLICATION	WATER VOLUME
HERBICIDES	2,4-D ESTER 700	Yes	12 L/ac
	ARMORY® 240	Yes	90–200 L/ac
	BADGE®	Yes (wheat, barley and oats only)	8–20 L/ac
	BISON® 400 L	Yes (cereal crops only)	12–18 L/ac
	BROMOTRIL® 240 EC	Yes (wheat and barley only)	8–16 L /ac
	CAZADO™	Yes	12 L/ac
	ESTEEM ALL IN®	Yes	12–20 L/ac
	ADAMA GLUFOSINATE 150 SL	Yes	23 L/ac
	LEOPARD®	Yes	10 L/ac
	MCPA ESTER 600	Yes	12 L/ac
INSECTICIDES	COSAYR®	Yes	20 L/ac
	SILENCER® 120 EC	Yes	4–16 L/ac
	SILENCER® DUO	Yes (with restrictions)	20 L/ac
FUNGICIDES	BUMPER® 432 EC	Yes	16–20 L/ac
	CAPTAN 480 SC	Yes (with restrictions)	See label
	CUSTODIA®	Yes	20 L/ac
	MAXENTIS®	Yes	20 L/ac
	ORIOUS® 430 SC	Yes	20 L/ac
	SORADUO™ / SORADUO™ ALL IN	Yes	20 L/ac
	SORATEL®	Yes	20 L/ac
	VANTANA™	Yes	Min. of 18.2 L/ac

If product is not on the list it can not be applied by air.

GENERAL CLEANING PRACTICES FOR SPRAYER EQUIPMENT

- 1. CLEAN SPRAYER:** Once tank is empty, clean sprayer in an area that will not allow the contamination of water bodies, sources, crops or other areas that are not accessible to others, pets and livestock.
- 2. RINSE 1:**
 - a) Rinse equipment, removing any product adhering to the inside of the tank. Fill tank to 10% full of water and herbicide recommended rinse solution (see below). Agitate for 15 minutes.
 - b) Flush RINSE 1 through the booms, hoses and nozzles then drain.
 - c) Once done flushing, disassemble all strainers, filters, nozzles, screens, diaphragms and boom ends where residue can get tied up. Clean separately with an ammonia solution of 100 ml/10 L water. Inspect thoroughly and reassemble.
- 3. RINSE 2:** Fill tank to 10% full of water and add the RINSE 2 solution if needed (see below) while agitating. Charge up the booms and continue to agitate for 15 minutes before flushing out again.
- 4. ADDITIONAL RINSES:** Complete additional rinses, as requested from the table below, by filling, agitating and flushing the system with the recommended solution each time.
- 5. FINAL RINSE:** Fill tank to 10% full of clean water and flush through the booms and hoses. Remove end caps/open ball valves and flush water through to ensure no spray solution is trapped. Drain any remaining water.

HERBICIDE	HERBICIDE NUMBER OF RINSES			
	1	2	3	4
2,4-D ESTER 700	W	D or A	W	
ARMORY® 240	W	S	W	
ARROW ALL IN®	W	D	W	
BADGE®	W	D or A	W	
BISON® 400 L	W	D or A	W	
BROMOTRIL® 240 EC	D	W	W	
CAZADO™	W	D	W	
DAVAI® 80 SL	W	W	W	
DAVAI® A PLUS	W	D	W	
DAVAI® Q PLUS	W	A	A	W
EMPHASIS® MAX	D	W	A	W
ESTEEM ALL IN®	W	D or A	W	
FORCEFIGHTER ALL IN®	W	D or A	W	
ADAMA GLUFOSINATE 150 SL	D	W	W	
INVOLVE® 50 WDG	W	A	W	W
LEOPARD®	W	A	A	W
MCPA ESTER 600	W	D or A	W	
OXALIS®	W	A	W	
PHANTOM® 240 SL	W	W	W	
PYTHON®	D	W	W	
RUSH 24 ALL IN®	W	D or A	W	
SAFACYN® ET	W	D	W	
SQUADRON®	D	D	D	W

IMPORTANT NOTES		SOLUTION
If a tank-mix partner is used, always check tank-mix partner label for any additional clean up procedures. Be cautious with dry granular products, like florasulam, which can severely harm a sensitive broadleaf crop if not properly cleaned out. WARNING: Never mix chlorine (bleach) and ammonia as a reaction-producing toxic gas can occur.	A	Ammonia Solution (min. 3% ammonia – Finish or Flush, and use a 1% solution – 1 L of product per 100 L of water)
	D	Detergent Solution
	S	Non-Ionic Surfactant
	W	Water

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METRIC/IMPERIAL CONVERSIONS

Metric Unit	Imperial Multiply by	Imperial Unit	Metric Multiply by	Metric Unit
LINEAR centimetre (cm)	x 0.39	inch	x 2.54	LINEAR centimetre (cm)
AREA square metre (m ²) hectare (ha)	x 1.2 x 2.5	square yard acres	x 0.84 x 0.4	AREA square metre (m ²) hectare (ha)
VOLUME litre (L) litre (L)	x 0.22 x 0.27	Imperial gallon U.S. gallon	x 4.55 x 3.79	VOLUME litre (L) litre (L)
PRESSURE kilopascals (kPa)	x 0.14	psi	x 6.9	PRESSURE kilopascals (kPa)
WEIGHT gram (g) kilogram (kg)	x 0.04 x 2.2	oz lb	x 28.35 x 0.45	WEIGHT gram (g) kilogram (kg)
AGRICULTURAL litres per hectare (L/ha) litres per hectare (L/ha) litres per hectare (L/ha) litres per hectare (L/ha) millilitres per hectare (ml/ha) millilitres per hectare (ml/ha) kilograms per hectare (kg/ha) grams per hectare (g/ha)	x 0.09 x 0.11 x 0.36 x 0.71 x 0.015 x 0.014 x 0.89 x 0.014	Imperial gallons per acre U.S. gallons per acre quarts per acre pints per acre Imperial fl. oz per acre U.S. fl. oz per acre lb per acre oz per acre	x 11.23 x 9.35 x 2.81 x 1.41 x 70.17 x 73.05 x 1.12 x 70	AGRICULTURAL litres per hectare (L/ha) litres per hectare (L/ha) litres per hectare (L/ha) litres per hectare (L/ha) millilitres per hectare (ml/ha) millilitres per hectare (ml/ha) kilograms per hectare (kg/ha) grams per hectare (g/ha)

EXAMPLE: To convert centimetres to inches, multiply by 0.39; conversely, to convert inches to centimetres, multiply by 2.54.

PHENOXY USE RATES

Active Ounces per Acre	Formulation (ml per acre)					Acres Treated per 10 L Jug				
	300	400	500	600	700	300	400	500	600	700
1	94	70	57	47	41	107	142	177	212	247
2	187	140	113	94	81	53	71	88	106	124
3	281	211	170	142	121	36	47	59	71	82
4	374	281	227	189	162	27	36	44	53	62
5	468	351	283	236	202	21	28	35	42	49
6	562	421	340	283	243	18	24	29	35	41
7	655	491	397	331	283	15	20	25	30	35
8	749	562	453	378	324	13	18	22	27	31
9	842	632	510	425	364	12	16	20	24	28
10	936	702	567	472	405	11	14	18	21	25

Recommended rates have been rounded to whole numbers.

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PRD TANK-MIXING DIRECTIVES

This directive from the Pesticide Regulatory Directorate (PRD) applies to ALL products included in this product guide.

PRD DIRECTIVES

1. Products may be tank-mixed with (a fertilizer, a supplement, or with) registered pest control products, whose labels also allow tank mixing, provided the entirety of both labels — including Directions For Use, Precautions, Restrictions, Environmental Precautions, and Spray Buffer Zones — are followed for each product.
2. In cases where these requirements differ between the tank-mix partner labels, the most restrictive label must be followed.
3. Do not tank-mix products containing the same active ingredient, unless specifically listed on the product label.
4. In some cases, tank mixing pest control products can result in reduced pesticide efficacy or increased host crop injury.

ADAMA CONTACT INFORMATION

The user should contact ADAMA Agricultural Solutions Canada Ltd. at 1-855-264-6262 for information before applying any tank-mix that is not specifically recommended on the product label.

TANK-MIXING GUIDELINES

WAMLEGS METHOD

W	WETTABLE powders, dispersible granules, soluble granules (WG, DF, SG, WP, SP)		
	INVOLVE [®] 50 WDG	FOLPAN [®] 80 WG	
	SQUADRON [®]		
A	AGITATE tank-mix thoroughly		
M	MICRO-ENCAPSULATED suspensions (ME)		
L	LIQUID flowables and suspensions (SC, SL, SN, LI, SU, SE)		
	ARMORY [®] 240	COSAYR [®]	
	BISON 400 L [*]	SILENCER [®] DUO A (SILENCER [®] DUO)	
	DAVAI [®] 80 SL (DAVAI [®] A PLUS & DAVAI [®] Q PLUS)	CUSTODIA [®]	
	ADAMA GLUFOSINATE 150 SL	CAPTAN 480 SC	
	OXALIS [®]	ORIOUS [®] 430 SC	
	PHANTOM [®] 240 SL	SORADUO [®] B (SORADUO [®])	
	PYTHON [®] A / PYTHON [®] B	VANTANA [®]	
	SAFACYN [®] ET	BREVIS [®] 150 SC	
E	EMULSIFIABLE concentrate formulations (EC)		
	2,4-D ESTER 700	MCPA ESTER 600	
	ADAMA QUIZALOFOP (DAVAI [®] Q PLUS)	RUSH 24 ALL IN [*]	
	ARROW ALL IN [*] (DAVAI [®] A PLUS)	CORMORAN [®]	
	BADGE [®]	SILENCER [®] 120 EC	
	BROMOTRIL [®] 240 EC	SILENCER [®] DUO B (SILENCER [®] DUO)	
	CAZADO [®] (Oil dispersion)	BUMPER [®] 432 EC	
	EMPHASIS [®] MAX	MAXENTIS [®]	
	ESTEEM ALL IN [*]	SORADUO [®] A (SORADUO [®])	
	FORCEFIGHTER ALL IN [*]	SORADUO [®] ALL IN	
	LEOPARD [®]	SORATEL [®]	

* OD formulations are oil based and behave similar to EC's; as such, include in the mixing order as you would an EC formulation.

The product listed is a component of the products shown in brackets.

Fill spray tank nearly full with water.

G	GLYPHOSATE formulations
S	SURFACTANTS

 ADAMA	 HERBICIDE
	 INSECTICIDE
	 FUNGICIDE
	 PLANT GROWTH REGULATOR

140  Always read and follow pesticide label directions.

GO TO:

HERBICIDES

INSECTICIDES

FUNGICIDES

PLANT GROWTH
REGULATOR

ADDITIONAL
RESOURCES

WAMLEGS METHOD

Some herbicide labels list a specific mixing sequence. In absence of specific directions, a recommended sequence for adding pesticide formulations to a tank partially filled with water is the WAMLEGS method. Each ingredient must be uniformly mixed before adding the next component. For example, a soluble powder must be completely dissolved before adding the next component. Adjuvants are added in the same sequence as pesticides: ammonium sulfate is a soluble powder, oil adjuvants are emulsifiable concentrates and most surfactants are solutions. Within each group, usually add the pesticide before the adjuvant. For example, add a soluble-powder pesticide before ammonium sulfate.

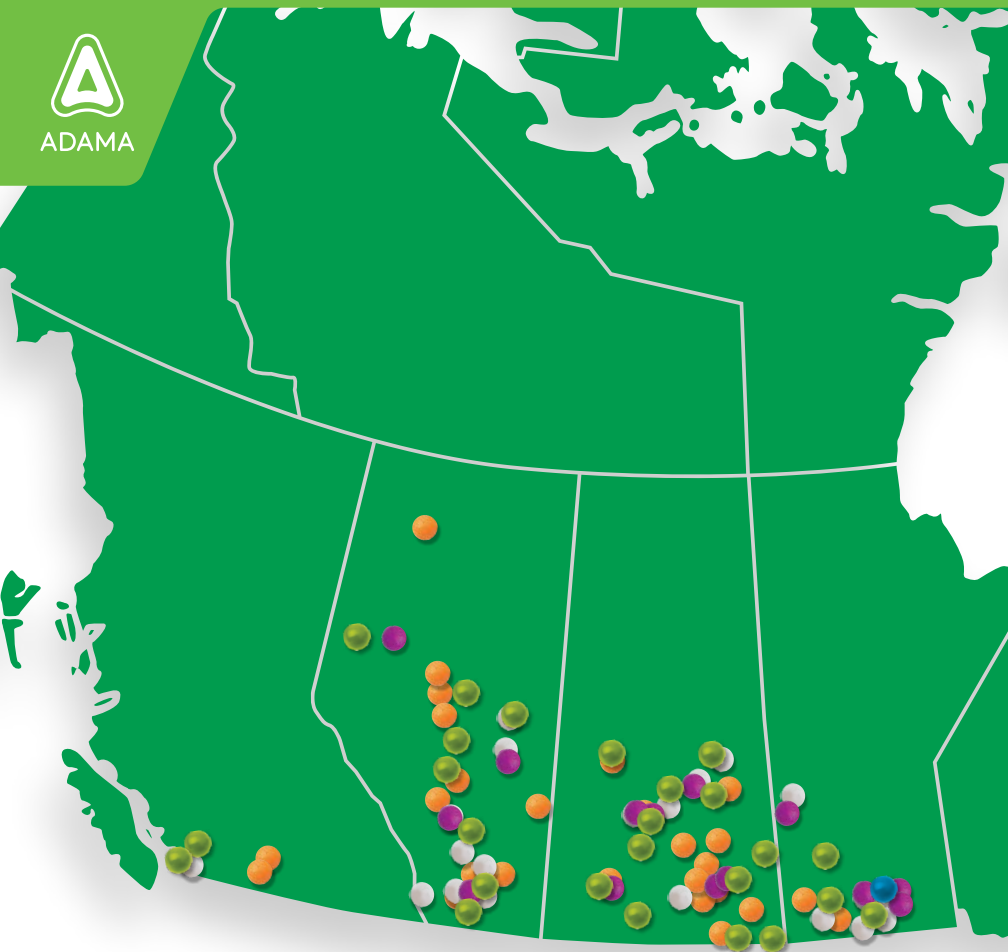
Know the benefits and risks of tank mixing before you make an application. In some cases, compatibility of two or more chemicals is based on the order in which they are added to the tank mix.

Tank mixing can lead to a variety of mishaps if not done correctly. Being aware of the benefits and risks while following the proper guidelines is critical to ensuring the success of any tank mix procedure and application.

This information is presented in good faith for your reference. Always read and follow product label directions before tank mixing.



ADAMA



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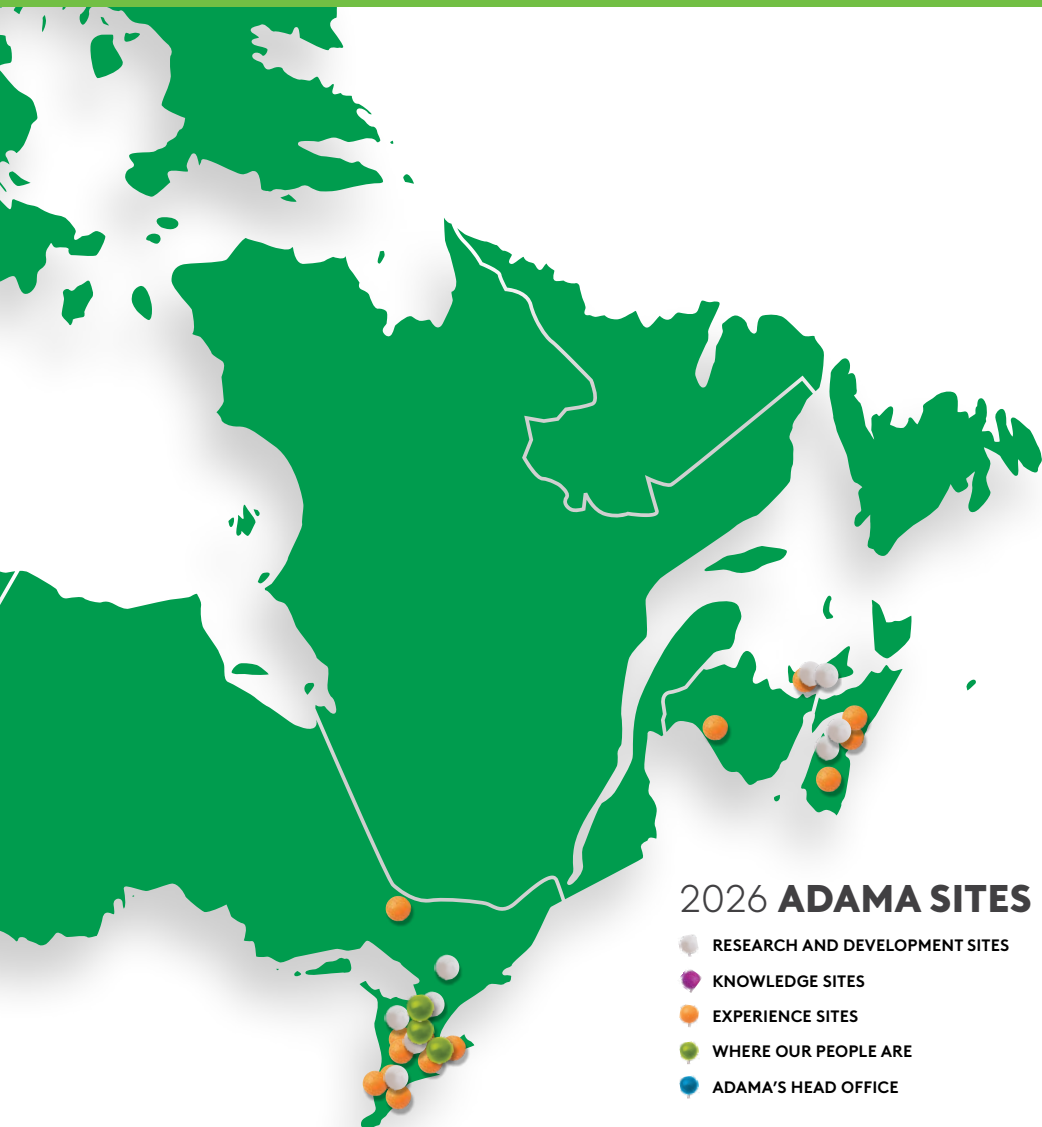
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