

Digital Version!

Click on page numbers and links
to easily navigate
throughout the guide



ADAMA



WE ARE

All In on Fruits & Vegetables

2024 FRUIT AND VEGETABLE PRODUCT GUIDE

Listen • Learn • Deliver

ADAMA.COM

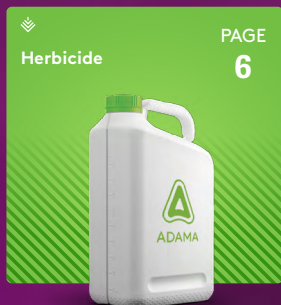


WE ARE

All In
on you

We proudly offer a suite of ever-evolving herbicide, fungicide and insecticide options you can customize to create easy-to-use solutions that protect your ROI and deliver results.

Crop protection, built for you.



Learn More!
Scan this QR Code or visit:

AllinOnYou.ca





Our team has continued to expand our engagement with farmers and retailers across the country. Most exciting for us is that these conversations are increasingly happening in the field where we are demonstrating our new products and getting feedback on formulations in development. This interaction is the foundation of ADAMA's focus of being "All in on You".

Being 'All In' means we are investing in expanding our Canadian team, increasing our local research and development and adding resiliency to our supply chain.

We know that fruit and vegetable growers need a very full toolbox and we are responding to those challenges by incorporating what we've learned from you into our portfolio offerings.

We are active in the field in all areas of Eastern Canada, and are very excited about the many new products and formulations available now for our horticultural producers, as well as many upcoming solutions that are currently being screened for launch in the next five years.

This is our innovation commitment and it starts with your input. That is what it means to ADAMA to be **All In on You**.

Sincerely,

Cornie Thiessen

*General Manager, Canada
ADAMA Agricultural Solutions*



MAKE THE SWITCH TO ADAMA!

Want to 'make the switch to ADAMA but don't know which one of your current products could be replaced, and by which ADAMA solution? It's easy!

The chart below lists some of our leading products and the competitive product that they replace.

For more information about each product as well as rates, tank-mix partners and other information, visit adama.com or contact your ADAMA sales rep.

PRODUCT COMPARISONS



FUNGICIDE

PRODUCT WITH ACTIVE	PRODUCT REPLACED
BUMPER® 432 EC <small>Low VOC</small> PROPICONAZOLE	Nufarm Propiconazole Princeton Tilt® 250E
CAPTAN 80 WSP CAPTAN	Supra® Captan 80 WDG Maestro® 80 DF
CAPTAN 480 SC <small>NEW</small> CAPTAN	Captan 48 SC
FOLPAN® 80 WDG FOLPET	Follow WDG
MAXENTIS® <small>NEW</small> <small>POWERED BY Asorbital 2</small> AZOXYSTROBIN & PROTHIOCONAZOLE	Unique to ADAMA
SORATEL® <small>POWERED BY Asorbital</small> PROTHIOCONAZOLE	Proline®



HERBICIDE

	PRODUCT WITH ACTIVE	PRODUCT REPLACED
GRASSY WEEDS	ARROW ALL IN® CLETHODIM	Unique to ADAMA Formulation advancement compared to Select®, Statue™ and Clethodim 250
	LEOPARD® QUIZALOFOP-P-ETHYL	Assure® II Yuma®
BROADLEAF WEEDS	PHANTOM® 240 SL IMAZETHAPYR	Pursuit®
	SQUADRON® METRIBUZIN	Sencor® TriCor®
	BROMOTRIL® BROMOXYNIL	Brotex®, Koril® Pardner®
DESICCANT	ARMORY® 240 DIQUAT	Reglone® Dessicash



INSECTICIDE

PRODUCT WITH ACTIVE	PRODUCT REPLACED
CORMORAN® NOVALURON & ACETAMIPRID	Unique to ADAMA Replaces Rimon®, Assail® 70 WP
NIMITZ® 480 EC FLUENSULFONE	Unique to ADAMA
SILENCER® 120 EC LAMBDA-CYHALOTHRIN	Labamba Matador® 120 EC
SOMBRERO® 600 FS IMIDACLOPRID	Stress Shield®
ZIVATA™ <small>Low VOC</small> LAMBDA-CYHALOTHRIN	Labamba Matador® 120 EC

“

ADAMA really empowers us to be creative. They give us a lot of opportunity and autonomy when we are developing formulations and I really appreciate those values as a company.

Andre Barabach
Product Manager





HERBICIDES

ARMORY® 240	7
ARROW ALL IN®	9
BROMOTRIL®	11
LEOPARD®.....	13
PHANTOM® 240 SL	15
SQUADRON®	17



ARMORY® 240

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



ACTIVE INGREDIENT

Diquat 240 g/L = EC

PACKAGING

Case: 2 x 10 L jugs

Bulk: 120 L drum

Tote: 450 L

Tote Max: 1000 L

APPLICATION RATES & ACRES TREATED

Ground: 500–1860 ml/ac

Aerial: 690–1090 ml/ac

Acres Treated:

- 5–20 ac/jug
- 64–240 ac/drum
- 240–900 ac/tote
- 537–2000 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

Vegetables:

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

Beans:

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

Legumes:

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

REGISTERED CROPS

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

- Beans (white and red kidney, adzuki)

OTHER USES AND WEEDS CONTROLLED

- Potato vines
- Desiccation for beans, and legume forage seed crops
- Weeds in stale seedbeds (vegetables crops)
- Weeds in vegetables (inter-row directed)
- Suppression of perennial grasses under apple trees



ARMORY® 240

HOW IT WORKS

ARMORY® 240 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
- Carfentrazone

MIXING INSTRUCTIONS

1. Fill the spray tank $\frac{3}{4}$ full with water.
2. Add the required amount of ARMORY® 240 into the sprayer.
3. Agitate until the herbicide is thoroughly mixed.
4. Continue agitation while adding the required amount of recommended registered surfactant at 0.10% v/v non-ionic surfactant (NIS) or 0.25% v/v Li700.
5. Complete filling the tank to the desired level with water.

ADJUVANT RATE

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

GRAZING RESTRICTIONS

Crop waste remaining after harvest (e.g. pea vines, alfalfa stems) 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.





HERBICIDE
IN-CROP • BROADLEAF

GROUP 1

ARROW ALL IN®

Grassy weed control in a variety of specialty crops
with the convenience of a built-in surfactant



ACTIVE INGREDIENT

Clethodim 120 g/L = EC

PACKAGING

Case: 2 x 6 L jugs

APPLICATION RATES & ACRES TREATED

Rate: 100 – 300 ml/ac

Acres Treated: 20 – 60 ac/jug

WATER VOLUME

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

Aerial: Do not apply by air.

RAINFASTNESS

1 hour

REGISTERED CROPS

- Dry beans (pinto, black, great northern, red, pink, navy)
- Coriander
- Cranberries
- Fenugreek
- Highbush blueberries
- Onions, dry
- Spinach

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 dandel, quackgrass (suppression), volunteer cereals (wheat, barley, oats), wild oats		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®.



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

PHANTOM® 240 SL: Dry beans

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 agitate¹.
4. OPTIONAL: For use of ARROW ALL IN® alone (not in a tank mixture), add the correct amount of adjuvant.
5. Fill the remainder of tank with water and continue agitating.
6. Agitate thoroughly after prolonged pauses.

¹When mixing with glufosinate, first add ARROW ALL IN®, followed by glufosinate.

PRE-HARVEST INTERVALS

- Highbush blueberries, Spinach: 14 days
- Cranberries, Fenugreek: 30 days
- Onions (dry): 45 days
- Coriander, Dry beans (pinto, black, great northern, red, pink, navy), Lentils: 60 days
- Sunflowers: 72 days

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.

QUICK TIPS:

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



BROMOTRIL®

Tough broadleaf weed control with tank-mix flexibility and excellent crop safety.



ACTIVE INGREDIENT

Bromoxynil Octanoate Ester 240 g/L = EC

PACKAGING

Case: 2 x 9.7 L jugs

APPLICATION RATES & ACRES TREATED

PRE-PLANT:

- Rate: 490 ml/ac
- Acres Treated: 20 ac/jug

IN-CROP BROADLEAF:

- Rate: 490 – 570 ml/ac
- Acres Treated: 17 – 20 ac/jug

WATER VOLUME

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

Aerial: Do not apply

RAINFASTNESS

30 minutes

REGISTERED CROPS

Crop	Rate (ml/ac)	Crop Stage
Garlic	490	Apply early post emergent to weeds One application per year. Observe a PHI of 58 days.
Onion (dry bulb)	243	Two applications per season at an interval of 10 to 18 days. <ul style="list-style-type: none"> • First application: 2- to 3-leaf • Second application: 4- to 5-leaf stage Application Precaution: BROMOTRIL® 240 EC may cause severe leaf burn in onions if weather conditions have not been conducive to the development of the outer waxy layer of the onion leaf.
Sweet corn	490–566	4- to 8-leaf (beyond 8-leaf requires drop pipes)

WEEDS CONTROLLED

Seedling up to 4-leaf stage:

- American nightshade
- Bluebur
- Cocklebur
- Common ragweed
- Cow cockle¹
- Green smartweed
- Kochia²
- Lady's thumb
- Pale smartweed
- Pigweed¹
- Russian thistle²
- Stinkweed¹
- Velvetleaf³
- Wild mustard¹

Seedling up to 8-leaf stage:

- Common buckwheat
- Common groundsel
- Lamb's quarters
- Tartary buckwheat
- Wild buckwheat

¹In normal conditions, it will be controlled up to 4-leaf stage. Plants beyond this stage are unlikely to be controlled; the higher rate generally gives better results.

²Spray before plants are 2 inches high.

³Spray before plants are 3 inches high.



BROMOTRIL®

HOW IT WORKS

BROMOTRIL® is a contact herbicide which controls Group 2- and Group 9-resistant biotypes. Leaves will yellow in 2–4 days with complete control in 7–14 days.

REGISTERED AND SUPPORTED TANK MIXES

BUMPER® 432 EC: Corn

MIXING INSTRUCTIONS

1. Fill spray tank $\frac{1}{2}$ full with water.
2. Add required amount of BROMOTRIL®. Begin agitation.
3. If tank-mixing, add any tank-mix partner(s) to the spray tank first, agitate and then add BROMOTRIL® (unless otherwise directed by the BROMOTRIL® and tank-mix partner label).
4. Add the remaining amount of water while agitation continues.

CROP ROTATIONS

No crop rotation restrictions

PRE-HARVEST INTERVAL

Sweet Corn: 20 days

Garlic: 58 days

Onions: 75 days

GRAZING RESTRICTIONS

- Do not use treated crops for grazing of livestock or green feed until 30 days after application.
- Do not cut treated crops for forage until 30 days after application.

STORAGE

Do not freeze.

QUICK TIPS:

Avoid spraying if temperatures are above 25°C. Leaf scorching may occur in corn if applied during or after adverse growing conditions, such as cool and wet or hot (above 27°C) and humid weather. For best results, spray when weeds are in the seedling stage.



HERBICIDE
IN-CROP • GRASS

GROUP 1

LEOPARD®

ADAMA's grass control product to control hard-to-kill grassy weeds in dry beans and cucurbit vegetable crops.



ACTIVE INGREDIENT

Quizalofop-P-ethyl 100 g/L = EC

PACKAGING

Case: 2 x 7.8 L jugs

APPLICATION RATES & ACRES TREATED

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

Acres Treated: 30 – 50 ac/jug (standard rate: 40 ac/jug)

WATER VOLUME

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

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

RAINFASTNESS

1 hour

REGISTERED CROPS

- Beans (dry & snap)
- Cucurbit vegetables
- Sugarbeets
- Lima, Adzuki & Mung beans (Ontario)
- Rutabagas (Ontario & Quebec)

WEEDS CONTROLLED

Check label as weed stage controlled by LEOPARD® varies.

- Barnyard grass
- Downy brome
- Fall panicum
- Foxtail barley
- Green foxtail
- Japanese brome
- Old witchgrass
- Proso millet
- Quackgrass¹
- Volunteer cereals (wheat, barley, oats)
- Volunteer corn
- Wild oats
- Yellow foxtail

¹Suppression at lower rates; control at higher rates

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.



LEOPARD®

REGISTERED AND SUPPORTED TANK MIXES

- Basagran®: Dry beans
- PHANTOM® 240 SL: Adzuki beans, Dry and snap beans, Lima beans,

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. Ensure that the herbicide is completely mixed before proceeding to the next step.
5. Add the rest of the required water to the tank. 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.

ADJUVANT RATES

- LEOPARD® is not packaged with, but requires, an adjuvant such as:
 - Merge® @ 0.5 – 1% v/v
 - LI700® @ 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
- Sugarbeets: 60 – 80 days
- Small red beans: 65 days

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.

PHANTOM® 240 SL

Flexible pre-plant incorporated broadleaf and grassy weed control in dry beans, peas with residual control to eliminate early season weed competition.



ACTIVE INGREDIENT

Imazethapyr 240 g/L = SL

PACKAGING

Case: 2 x 3.3 L jugs

APPLICATION RATES & ACRES TREATED

Rate: 126 – 170 ml/ac

Acres Treated: 20 – 26 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 incorporated	Pre-emergent
Adzuki beans	•	•
Dry common beans (black, cranberry, Dutch brown, kidney, white, yellow eye)	Cranberry Kidney White	•
Lima beans (Ontario only)		•
Snap beans	•	•
Snow peas	•	•

WEEDS CONTROLLED

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

Broadleaf weeds:

- Cocklebur
- Common ragweed
- Eastern black nightshade¹
- Lady's thumb
- Lamb's quarters
- Ragweed¹
- Redroot pigweed¹
- Smartweed
- Velvetleaf
- Wild buckwheat
- Wild mustard

Grasses:

- Barnyard grass
- Crabgrass
- Foxtail (green, yellow)
- Witch grass
- Proso millet

¹ Excluding Group 2-resistant weeds

HOW IT WORKS

PHANTOM® 240 SL is a selective herbicide that can be applied as an pre-plant incorporated or pre-emergent in vegetable and dry bean crops. The application method depends upon the crop, anticipated weed spectrum and the preference of the applicator. With pre-plant and pre-emergent treatments, susceptible weeds emerge, are present as stunted plants and then die.



PHANTOM® 240 SL

CROP STAGING

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

REGISTERED AND SUPPORTED TANK MIXES

- Trifluralin: Dry common beans, Lima beans, Kidney beans, White beans
- Edge®: Dry common beans

MIXING INSTRUCTIONS

1. Fill clean spray tank $\frac{1}{2}$ to $\frac{3}{4}$ full of clean water and turn agitation on.
2. Add the required amount of PHANTOM® 240 SL and continue agitation.
3. Add the required amount of non-ionic surfactant and continue agitation.
4. Fill with remaining water.

CROP ROTATIONS

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

- Adzuki beans
- Black beans
- Imidazolinone-tolerant canola
- Cranberry beans
- Dutch brown beans
- Field corn (including imidazolinone-tolerant varieties)
- Kidney beans
- Lima beans
- Processing peas
- Soybeans
- Spring barley
- Wheat (winter, spring)
- White beans
- Yellow eyed beans

PRE-HARVEST INTERVALS

- Snap peas: 40 days
- Processing peas: 50 days
- Snow peas: 60 days
- Lima beans: 90 days
- Dry beans²: 100 days

GRAZING RESTRICTIONS

Do not graze treated crops or cut for hay.

STORAGE

Do not freeze.

² Kidney, adzuki, Dutch brown, black, yellow eye, white and cranberry beans.

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 inches deep using a roller or S-tine cultivator to control escaped weeds until the field receives adequate moisture.



HERBICIDE
IN-CROP • BROAD SPECTRUM

GROUP 5

SQUADRON®

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



ACTIVE INGREDIENT

Metribuzin

PACKAGING

Case: 4 x 5 kg jugs

APPLICATION RATES & ACRES TREATED

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

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)
- Processing carrots
- Transplanted tomatoes (grown for processing)

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

¹ Pre-emergence only

² Suppression with multiple post-emergent applications of 200 g/ha

³ Post-emergent applications only



SQUADRON®

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
- Carrots, Tomatoes*: 60 days
- Highbush blueberries: 2 years

NOTE: Please reference the label for any crops not listed.

*For one application. For split applications, the PHI is 30 days

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, sugarbeets, table beets, turnips, pumpkins, squash, cucumbers, melons, and tobacco 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.

**REGISTERED AND SUPPORTED TANK MIXES AND APPLICATION TIMING**

Crop	Application Method	Products
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

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.



INSECTICIDES

CORMORAN®	21
NIMITZ® 480 EC	26
SILENCER® 120 EC	28
ZIVATA™	30



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

PACKAGING

Case: 2 x 10.08 L jugs

APPLICATION RATES & ACRES TREATED

Rate: 180 – 840 ml/ac

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

- Apples
- Brassica leafy greens (Crop subgroup 4-13B)
- Bushberries (Crop subgroup 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

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.



CORMORAN®

CROP STAGING AND RATES

Crop	Insects Controlled	Rate (ml/ac)	Application Instructions
FRUIT CROPS			
Apples	Leafhopper, Tentiform leafminer	280	<p>Do not apply more than 2800 ml/ac per season.</p> <p>Apply in minimum finished spray volume of 400 L/ac by ground.</p> <p>Repeat applications if needed to maintain control but do not make applications < 12 days apart.</p>
	Aphids	280 – 420	
	Gypsy moth, Japanese beetle, Mullein bug	340 – 500	
	Green fruitworm	420	
	Apple maggot, Codling moth, European apple sawfly, Oriental fruit moth, Plum curculio	420 – 500	
	Lesser appleworm, Tarnished plant bug	500	
	Dogwood borer	600	
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	<p>Applications per season: 4</p> <p>Apply in minimum finished spray volume of 405 L/ac. Use the high rate under heavy pest pressure.</p> <p>Do not apply during bloom.</p> <p>Minimum re-application interval of 10 days.</p>
	Cherry fruit fly (suppression, cherry only), Plum curculio (under high pressure, suppression only)	840	
Strawberries	Aphids, Leafhopper	200 – 300	<p>Applications per season: 3</p> <p>Do not apply more than once every 10–14 days.</p> <p>Apply in a min. application volume of 80 L/ac by ground.</p> <p>Do not apply during bloom.</p>
	Strawberry clipper weevil, Tarnished plant bug	360	

**CORMORAN®**

Crop	Insects Controlled	Rate (ml/ac)	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	Applications per season: 3
	Japanese beetle	280	Apply in a finished spray volume of 80 L/ac by ground.
	Blueberry maggot fly	300 – 560	Do not apply more than once every 10 – 14 days.
	Blueberry flea beetle, Blueberry spanworm, Strawberry rootworm, Cherry fruitworm, Cranberry fruitworm, Spotted wing drosophila, Thrips	560	
VEGETABLE CROPS			
Peppers (bell and non-bell)	Colorado potato beetle	180 – 280	Do not make applications less than 7 days apart.
	Aphids	200	
	European corn borer	260 – 300	Do not apply more than 1050 ml/ac per season.
	Armyworm, Cabbage looper	180 – 300	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.

**CORMORAN®**

Crop	Insects Controlled	Rate (ml/ac)	Application Instructions
VEGETABLE CROPS (CONT'D)			
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	Applications per season: · Two at low rate · One at high rate Do not apply more than 680 ml/ac per season.
	Aphids	260 – 300	Apply in a minimum finished spray volume of 81 L/ac by ground.
	Lygus bug, Swede midge	200	
Leafy vegetables – Brassica leafy greens (Crop subgroup 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	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.
Sweet corn	Aphids	200 – 280	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®

REGISTERED AND SUPPORTED TANK MIXES

- Acramite® 50 WS: Apples, Stone fruit Crop Group 12
- Luna Sensation™: Brassica (cole) leafy vegetables (Crop group 5-13), Stone fruit (Crop group 12-09), Bushberries (Crop sub-group 13-07B)
- Polyram® DF WSP: Apples, Potatoes
- Pristine® WG: Leafy vegetables – Brassica leafy greens (Crop subgroup 4-13B), Lowbush blueberries, Head and stem Brassica (cole) leafy vegetables (Crop group 5-13), Peppers, Saskatoon berries, Stone fruits, Strawberries

MIXING INSTRUCTIONS

1. Fill clean tank ½ full with clean water. and start agitation.
2. Pour required amount of product directly from container into partially filled spray tank.
3. Continue filling tank. Increase agitation if necessary, to maintain surface action.
4. Keep agitation during mixing and application to assure uniform suspension. If mixture sits without agitation for extended periods, agitate the mixture for at least 10 minutes before use.

CROP ROTATIONS

No restrictions

PRE-HARVEST INTERVALS

- Strawberries: 1 day
- Brassica leafy vegetables (Crop group 5-13 and subgroup 4-13B), Peppers, Stone fruits (Crop group 12-09): 7 days
- Bushberries (Crop sub-group 13-07B): 8 days
- Sweet corn: 10 days
- Apples: 14 days

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.

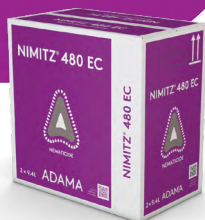
QUICK TIPS:

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. If orchards have been historically infested with mites or aphids, be sure to scout regularly and use miticides to control their populations.



NIMITZ® 480 EC

A fast-acting contact nematicide, NIMITZ® 480 EC is a revolutionary management option for controlling root-knot and root lesion nematodes in fruiting vegetables and cucurbits.



ACTIVE INGREDIENT

Fluensulfone 480 g/L = EC

PACKAGING

Case: 2 x 4.6 L jugs

APPLICATION RATES & ACRES TREATED

Rate: 1.62 – 3.24 L/ac

Acres Treated: 3 – 6 ac/jug

WATER VOLUME

Ground: 120 L/ac (32 US gal/ac)

Aerial: Do not apply by air.

RAINFASTNESS

If NIMITZ® 480 EC is applied in heavy rainfall areas, avoid application during rain or when rain is forecasted within the next 24 hours. Excessive moisture immediately after application may cause this product to move past the targeted zone.

REGISTERED CROPS

- Cucumbers
- Eggplant
- Melons
(cantaloupe, watermelon, honeydew)
- Okra
- Peppers (bell, non-bell)
- Squash
- Tomatoes (except small tomatoes)

KEY INSECTS CONTROLLED

- Root-knot nematodes
- Root-lesion nematodes

HOW IT WORKS

Fluensulfone is a true nematicide that kills the target by contact, rather than temporary paralysis activity as seen with older organophosphate and carbamate chemistry. NIMITZ® 480 EC has rapid activity. After one hour of exposure, nematodes cease feeding, become paralyzed and complete mortality is achieved within 24 – 72 hours. Any nematode eggs laid after exposure to NIMITZ® 480 EC are likely to be unviable, or if juveniles do hatch, they do not survive.

APPLICATION TIMING AND CROP STAGING

Applications can be broadcast incorporated, banded and incorporated, or applied by drip (trickle) chemigation. Apply at a rate of 1.62 – 3.24 L/ac a minimum of 7 days before transplanting. Soil applications should be applied only in accordance with directions and conditions of use described in this labeling. Treated areas can be covered with plastic or left uncovered according to planting practices. NIMITZ® 480 EC does not provide residual control of nematodes. Do not apply more than 1 application per crop and no more than 3.24 L/ac of product per year (365 days).



NIMITZ® 480 EC

REGISTERED AND SUPPORTED TANK MIXES

Do not apply NIMITZ® 480 EC with any other product before testing for physical and chemical compatibility of the mixture. To determine compatibility pour the recommended proportions of the product(s) into a suitable container. After mixing, wait for 30 minutes and check to see if the product remains mixed. If the product remains mixed, it is considered physically compatible.

MIXING INSTRUCTIONS

1. Add the recommended amount of NIMITZ® 480 EC to the water in the spray tank and mix well.
2. Continue agitation at frequent intervals during application.
3. If NIMITZ® 480 EC is to be mixed with other products or fertilizers, the physical compatibility of the mixture should be tested as described above prior to use.

CROP ROTATIONS

Fruiting vegetables and cucurbits may be planted following an application of this product.

GRAZING RESTRICTIONS

Do not feed treated commodities or any residual plant material to animals.

STORAGE

Do not freeze.

QUICK TIPS:

Soil moisture should be adequate for uniform mechanical incorporation and to support seed germination or plant growth. For optimal performance, all applications must be incorporated by water and/or mechanical means to a depth of 15–20 cm. Resume a normal irrigation schedule immediately after transplanting.



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

PACKAGING

Case: 4 x 3.785 L jugs

APPLICATION RATES & ACRES TREATED:

Rate: 17 – 94 ml/ac

(standard rate for most pests: 34 ml/ac)

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

1 hour

REGISTERED CROPS

- Apples
- Brassica crops (broccoli, Brussels sprouts, cauliflower)
- Carrots
- Cherries
- Choke cherry
- Corn (sweet)
- Peaches and Nectarines
- Pears
- Plums
- 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

- Apple aphid
- Apple brown bug
- Apple leaf midge
- 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 borer
- 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
- Oblique-banded leafroller
- Onion thrips
- Oriental fruit moth
- Pale apple leafroller
- Pea aphid
- Pea leaf weevil
- Pear psylla (nymphs, adults)
- Plum curculio
- Prairie tent caterpillar
- Spotted tentiform leafminer
- Swede midge
- Tarnished plant bug
- Tuber flea beetle
- Ugly nest caterpillar
- Western bean cutworm
- White apple leafhopper
- Winter moth
- Woolly apple aphid



SILENCER® 120 EC

HOW IT WORKS

Fast-acting stomach and contact insecticide

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.

REGISTERED AND SUPPORTED TANK MIXES

NOTE: Tank mixes vary by crop. Please refer to the label for specific tank-mixes and rates

MIXING INSTRUCTIONS

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

CROP ROTATIONS

No restrictions the year following treatment

PRE-HARVEST INTERVALS

Corn (sweet), Legumes: 21 days

Please refer to the label for pre-harvest intervals for each crop.

GRAZING RESTRICTIONS

DO NOT cut treated fields for silage/forage.

DO NOT graze treated fields.

DO NOT feed treated crops to livestock.

For grasses/non-grasses grown for seed production only: DO NOT feed seed screenings and aftermath to livestock.

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.



ZIVATA™

New choice in insect control giving you the same trusted results in a more sustainable and advanced formulation.



ACTIVE INGREDIENT

Lambda-cyhalothrin 120 g/L = EC

PACKAGING

Case: 2 x 4.08 L jugs

APPLICATION RATES & ACRES TREATED

Rate: 17–94 ml/ac

(standard rate for most pests: 34 ml/ac)

Area Treated: 45–240 ac/jug

(120 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

1 hour

Low VOC

FORMULATION TECHNOLOGY

REGISTERED CROPS

- Apples
- Brassica crops (broccoli, Brussels sprouts, cauliflower)
- Carrots
- Cherries
- Choke cherry
- Corn (field, sweet)
- Nectarines
- Peaches
- Pears
- Plums
- Soybeans
- Strawberries
- Sweet potatoes
- Tobacco
- Tomatoes

ZIVATA™ is registered for use on more than 30 crops; refer to the label for more information.

HOW IT WORKS

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

APPLICATION RATES

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.

KEY BENEFITS

- Advanced formulation using sustainable, plant-based materials
- Low Volatile Organic Compound (VOC) with low odour formulation
- Improved user experience and flexibility of use around odour-sensitive areas
- Trusted and proven active ingredient
- Broad range of crops, pests and use patterns

**KEY INSECTS CONTROLLED**

- Apple aphid
- Apple brown bug
- Apple leaf midge
- 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 borer
- 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
- Oblique-banded leafroller
- Onion thrips
- Oriental fruit moth
- Pale apple leafroller
- Pea aphid
- Pea leaf weevil
- Pear psylla (nymphs, adults)
- Plum curculio
- Prairie tent caterpillar
- Spotted tentiform leafminer
- Swede midge
- Tarnished plant bug
- Tuber flea beetle
- Ugly nest caterpillar
- Western bean cutworm
- White apple leafhopper
- Winter moth
- Woolly apple aphid

REGISTERED AND SUPPORTED TANK MIXES

NOTE: Tank mixes vary by crop. Please refer to the label for specific tank-mixes and rates.

MIXING INSTRUCTIONS

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

PRE-HARVEST INTERVALS

Corn (sweet), Legumes: 21 days

Please refer to the label for pre-harvest intervals for each crop.

GRAZING RESTRICTIONS

DO NOT cut treated fields for silage/forage.

DO NOT graze treated fields.

DO NOT feed treated crops to livestock.

For grasses/non-grasses grown for seed production only:

DO NOT feed seed screenings and aftermath to livestock.

CROP ROTATIONS

No restrictions the year following the treatment

STORAGE

Do not freeze.

QUICK TIPS:

Control of some insect species with pyrethroid insecticides decreases as temperature rises (above 25° C). For best results, apply ZIVATA™ during the early morning before temperatures rise, and during the evening, past the heat of the day. Use sufficient water for thorough coverage.



FUNGICIDES

.....

BUMPER® 432 EC 33

CAPTAN 80 WSP 35

NEW CAPTAN 480 SC 38

FOLPAN® 80 WDG 41

NEW MAXENTIS® 43

SORATEL® 45

.....

BUMPER® 432 EC

Broad-spectrum systemic fungicide that protects against yield and quality losses due to leaf disease including mummy berry in blueberries



ACTIVE INGREDIENT

Propiconazole 432 g/L = EC

PACKAGING

Case: 2 x 4.8 L jugs

APPLICATION RATES & ACRES TREATED

Rate: 120 ml/ac

Acres Treated: 27 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

Low VOC

FORMULATION TECHNOLOGY

REGISTERED CROPS

- Apricots
- Asparagus
- Blueberries (lowbush, highbush)
- Cherries (sweet, sour)
- Corn
- Cranberries
- Caneberries (Crop group 13A)
- Dry edible beans
- Nectarines
- Peaches
- Plums
- Saskatoon berries

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.

APPLICATION TIMING AND CROP STAGING

Crop	Rate (ml/ac)	Diseases
FRUIT CROPS		
Apricots, Peaches, Nectarines, Plums	120	Brown rot blossom blight, Fruit brown rot
Plums		Black knot (suppression)
Blueberries (highbush, lowbush)		Mummy berry
Caneberries (Crop group 13A)		Yellow rust
Cherries (sweet, sour)		Brown rot blossom blight, Fruit brown rot, Cherry leaf spot
Cherries (sour)		Black knot (suppression)
Cranberries		Cottonball
Saskatoon berries		Entomosporium leaf and berry spot, Saskatoon juniper rust

BUMPER® 432 EC

APPLICATION TIMING AND CROP STAGING (CONT'D)

Crop	Rate (ml/ac)	Diseases
VEGETABLE CROPS		
Asparagus	60	Rust
Corn ¹	120	Eye spot, Grey leaf spot, Rusts,
	60-120	Helminthosporium leaf spot, Northern corn leaf blight, Southern corn leaf blight
Dry edible beans ²	120	Rust
Rutabagas	97	Powdery mildew

KEY REGISTERED AND SUPPORTED TANK MIXES

Insecticides:

- SILENCER® 120 EC and ZIVATA™: Asparagus, Cherries, Corn, Dry beans, Peaches, Nectarines, Plums

NOTE: Tank mixes vary by crop. Please refer to the label for specific tank-mixes and rates

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.

CROP ROTATIONS

No restrictions

PRE-HARVEST INTERVALS

- Apricots, Cherries (sweet, sour), Nectarines, Peaches, Plums: 3 days
- Rutabagas: 21 days
- Dry and edible beans: 28 days
- Cranberry: 45 days
- Saskatoon berry: 38 days
- Blueberry (highbush, lowbush): 60 days
- Asparagus: 8 months

GRAZING RESTRICTIONS

Do not graze livestock within 3 days of spraying.

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 80 WSP

CAPTAN 80 WSP can be used as a spray for the control of certain fungus diseases of fruit, vegetables and ornamental crops as well as a soil treatment for the control of certain seed-rots and damping-off diseases.



ACTIVE INGREDIENT

80% CAPTAN = WSP (water-soluble pouch)

PACKAGING

Case: 4 foil bags x 5 pouches of 0.5 kg

APPLICATION RATES & ACRES TREATED

Rate: Varies by crop, refer to table below.

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 chart below

RAINFASTNESS

N/A

REGISTERED CROPS

This is only a partial list of crops registered for use with CAPTAN 80 WSP.

For the full list, please refer to the CAPTAN 80 WSP label.

- Apples
- Apricots
- Blackberries
- Blueberries (highbush, lowbush)
- Cherries
- Cucumbers (field grown)
- Ginseng
- Grapes
- Loganberries
- Nectarines
- Peaches
- Pears¹
- Plums
- Prunes
- Raspberries
- Rhubarb
- Strawberries (field grown)
- Tomatoes (field grown – foliar applications)

KEY DISEASES CONTROLLED AND APPLICATION RATES

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

Crop	Disease	Application Rate
FRUIT CROPS		
Apples	Scab, Sooty blotch, Fly speck, Brook's spot, Bitter rot, Black Rot, Bull's eye rot	1.2 kg/ac
Pears ¹	Scab, Sooty blotch	
Apricots	Brown rot	1.6 kg/ac
Cherries	Brown rot, Leaf spot (Shot Hole)	
Peaches and Nectarines	Brown rot, Scab	
Plums and Prunes	Black knot, Brown rot	
Grapes	Dead arm (current season's infections)	0.8 kg/ac
	Downy mildew, Black rot	0.8–1.2 kg/ac
Rhubarb (in forcing sheds)	Leaf rot	0.5–0.8 kg/1,000 L water

¹ Do NOT use on D'Anjou pears

CAPTAN 80 WSP

KEY DISEASES CONTROLLED AND APPLICATION RATES (CONT'D)

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

Crop	Disease	Application Rate
FRUIT CROPS (CONT'D)		
Raspberries	Fruit rot Spur blight	1 kg/ac
Blackberries	Fruit rot	0.9 kg/ac
Loganberries	Cane spot, Fruit rot, Leaf spot, Spur blight	0.6 – 0.9 kg/ac
Blueberries	Fruit rot, Mummy berry	0.9 kg/ac
Strawberries	Grey mould, Leaf spot	1.4 kg/ac
Rhubarb (in forcing sheds)	Leaf rot	0.5 – 0.8 kg/ 1,000 L water
VEGETABLE CROPS		
Cucumbers (field only)	Anthracnose, Scab	0.9 – 1.7 kg/ac
Tomatoes	Anthracnose, Septoria leaf spot	1.1 – 1.7 kg/ac
Ginseng	Control: rhizoctonia root rot, pythium root rot and damping-off, phytophthora root rot and grey mould Suppression: cylindrocarpon root rot	1 kg/ac (0.8 kg ai/ac) in a spray volume of 378 – 757 L of water per acre

CAPTAN 80 WSP

REGISTERED AND SUPPORTED TANK MIX

Nova™: Apples Blackberries, Blueberries, Cherries, Cucumbers, Grapes, Nectarines, Peaches, Pears, Prunes, Raspberries, Strawberries, Tomatoes

MIXING INSTRUCTIONS

1. Fill the spray tank $\frac{1}{3}$ to $\frac{1}{2}$ full with clean water and begin agitation or bypass.
2. Add the required number of unopened pouches of CAPTAN 80 WSP fungicide directly to the spray tank.
3. Vigorous agitation is required for CAPTAN 80 WSP fungicide to become fully suspended. The water temperature and the degree of agitation will determine the amount of time for the pouches to dissolve. The pouches should be completely dissolved before application or adding tank-mix partners. Maintain sufficient agitation during both mixing and application.
4. If required, add the tank-mix partner.

CROP ROTATIONS

No restrictions

PRE-HARVEST INTERVALS

- Apricots, Blueberries, Cherries, Cucumbers, Loganberries, Nectarines, Peaches, Plums, Prunes, Rhubarb, Strawberries, Tomatoes: 2 days
- Apples, Grapes, Pears: 7 days
- Ginseng: 20 days

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.

GRAZING RESTRICTIONS

N/A

STORAGE

May be stored at any temperature

QUICK TIP:

The enclosed pouches containing CAPTAN 80 WSP fungicide are water-soluble and will dissolve completely in water. After opening the outer bag, drop the required number of unopened inner pouches into the spray tank as directed. Reseal outer bag to protect remaining pouches. Do not excessively handle water-soluble pouches or expose to moisture since this may cause breakage. Do not allow pouches to become wet prior to mixing spray solution.

CAPTAN 480 SC

CAPTAN 480 SC is now available in a liquid formulation for more convenience with the same control of those tough to control diseases in a broad range of fruit, vegetable and ornamental crops.



ACTIVE INGREDIENT

Captan 482 g/L

PACKAGING

Case: 2 x 10 L jugs

APPLICATION RATES & ACRES TREATED

Rate: Varies by crop, refer to table below.

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 chart below

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
- Prunes
- Raspberries
- Rhubarb
- Strawberries (field grown)
- Tomatoes (field grown – foliar applications)

KEY DISEASES CONTROLLED AND APPLICATION RATES

NOTE: Unless otherwise noted, water volume (ground application) is 400 L/ac and minimum application interval is 7 days.

Crop	Diseases	Application Rate
VEGETABLE CROPS		
Cucumbers	Anthrachnose, scab	Rate: 1.5 – 2.83 L/ac (0.73 – 1.38 kg a.i./ac) Maximum applications per year: 3 DO NOT use on greenhouse cucumber.
Tomatoes	Anthrachnose, Septoria leaf spot	Rate: 1.85 – 2.83 L/ac (0.89 – 1.38 kg a.i./ac) 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, Cylindrocarpum root rot (suppression only)	Rate: 1.68 L/ac (0.81 kg a.i.) in 378–757 L of water per acre Maximum applications per year: 8 DO NOT apply by air.

CAPTAN 480 SC

KEY DISEASES CONTROLLED AND APPLICATION RATES (CONT'D)

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) Maximum Applications per year: · 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.
Pears (except d'Anjou)	Scab, sooty blotch	
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 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.) 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.) Maximum applications per year: 6 DO NOT apply by air.
Raspberries	Fruit rot, spur blight	Rate: 1.68 L (0.81 kg a.i.) Maximum applications per year: 6 DO NOT apply by air.
Strawberries	Gray mould rot, leaf spot	Rate: Apply 2.35 L (1.13 kg a.i.) Maximum applications per year: 6 DO NOT use on greenhouse strawberries.
Rhubarb (in forcing sheds)	Grey mould	Rate: Apply 0.85-1.34 L (0.4-0.65 kg a.i.) Maximum spray volume; 60 L/ac Maximum applications per year: 6 DO NOT apply by air.

CAPTAN 480 SC

TANK MIXES

Nova™: Apples Blackberries, Blueberries, Cherries, Cucumbers, Grapes, Nectarines, Peaches, Pears, Prunes, Raspberries, Strawberries, Tomatoes

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.

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

PRE-HARVEST INTERVALS

- Apricots, Blueberries, Cherries, Cucumbers, Loganberries, Nectarines, Peaches, Plums, Prunes, Rhubarb, Strawberries, Tomatoes: 2 days
- Apples, Grapes, Pears: 7 days
- Ginseng: 20 days

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.

CROP ROTATIONS

No restrictions

GRAZING RESTRICTIONS

N/A

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.

FOLPAN® 80 WDG

A water-dispersible granular fungicide that delivers exceptional protection against the most common and economically damaging diseases in grapes and other fruit, vegetable and ornamental crops



ACTIVE INGREDIENT

80% Folpet = WDG

PACKAGING

Case: 2 x 5 kg packs

APPLICATION RATES & ACRES TREATED

Rate: 0.5–2 kg/ac

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

N/A

REGISTERED CROPS

- Apples
- Crabapples
- Field cucumbers
- Field tomatoes
- Grapes
- Melons
- Pumpkins
- Squash
- Strawberries

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.

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.

FOLPAN® 80 WDG

APPLICATION TIMING AND CROP STAGING (continued)

Crop	Diseases	Timing
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.

REGISTERED AND SUPPORTED TANK MIXES

Kumulus® DF: Apples, Cranberries, Grapes

MIXING INSTRUCTIONS

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

CROP ROTATIONS

No restrictions

GRAZING RESTRICTIONS

No restrictions

STORAGE

May be stored at any temperature

PRE-HARVEST INTERVALS

- Field cucumbers, Melons, Pumpkins, Squash: 11 days
- Cranberries: 30 days

Mechanical harvesting*

- Crabapples, Field tomatoes, Grapes, Strawberries: 1 day

Hand harvesting*

- Crabapples, Grapes: 3 days
- Strawberries: 11 days
- Field tomatoes: 22 days

*Crops listed have different PHIs for mechanical and hand harvesting.

QUICK TIPS:

Fungicidal activity is reduced if combined with strongly alkaline materials such as hydrated lime.

Do not use in combination with or closely following an oil spray.

MAXENTIS®

Powered by ASORBITAL® 2 Formulation Technology, MAXENTIS® provides protection against rust in lowbush blueberries. Features two distinct, elite modes of action (Groups 3 & 11) for resistance management and long lasting systemic activity.

ACTIVE INGREDIENTS

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

PACKAGING

Case: 2 x 8.45 L jugs
Drum: 118.1 L

APPLICATION RATES & ACRES TREATED

Rate: 253 ml/ac

Acres Treated:

- 33 ac/jug
- 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

- Lowbush blueberries (east only)

KEY DISEASES CONTROLLED

- Leaf rust (suppression)

HOW IT WORKS

Two powerful active ingredients, combined for the first time in Canada, that provide protective and curative action on a wide range of diseases, across multiple crops.

APPLICATION TIMING AND CROP STAGING

Crop	Diseases	Rate (ml/ac)	Timing
Lowbush Blueberries	Rust (suppression)	253	<p>Apply at the first sign of disease in the spout year. After initial application, one additional application may be made 1–14 days afterwards if conditions remain favourable for continued or increased disease development.</p> <p>Maximum applications per year: 2</p>



POWERED BY
Asorbital® 2
FORMULATION TECHNOLOGY

MAXENTIS®

MIXING INSTRUCTIONS

1. Fill the clean spray tank $\frac{3}{4}$ full of clean water.
2. Add the required amount of MAXENTIS® and agitate thoroughly.
3. Continue agitation and add the required amount of the tank-mix partner.
4. Complete filling tank to the desired level with water.

CROP ROTATIONS

No restrictions

GRAZING RESTRICTIONS

Forage, Hay: 30 days

Grazing or green feed: 6 days

NOTE: Do not feed dried pea vines to livestock.

STORAGE

Do not freeze.

PRE-HARVEST INTERVALS

Lowbush blueberries: 30 days

*See label for the complete list of pre-harvest intervals for other registered crops.

KEY BENEFITS

- Unique combination of prothioconazole and azoxystrobin
- Enhanced EC formulation – with bulk packaging capabilities
- Multi-mode activity for resistance management (Groups 3 & 11)
- Broad-spectrum disease control with protective and curative action
- Whole plant protection: translaminar and systemic movement
- Wide window of application

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.

SORATEL®

Advanced disease protection powered by Asorbital® Formulation Technology.

Offering a flexible application window, SORATEL® fungicide is proven to protect a wide variety of berries from disease.



POWERED BY
Asorbital®
FORMULATION TECHNOLOGY

ACTIVE INGREDIENT

Prothioconazole 250 g/L = EC

PACKAGING

Case: 2 x 9.6 L jugs

APPLICATION RATE & ACRES TREATED

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

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

- Low-growing berries except strawberries (Crop sub-group 13-07H)
- Brassica carinata
- Bushberries (Crop sub-group 13B)
- Crambe
- Corn (sweet, popcorn)
- Peanuts
- Sugarbeets

KEY DISEASES CONTROLLED

Crop	Diseases	Rate ml/ac (ml/ha)	Timing
Corn			
Sweet corn, popcorn (including seed production)	Eyespot, Gibberella ear rot ¹ , Grey leaf spot, Northern corn, leaf blight, Rust	240 (600)	First sign of disease; Apply from development stage of corn between full silk emergence (BBCH 63) to early silk browning (BBCH 67)
Berries			
Bushberries (Crop subgroup 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.	Septoria leaf spot ¹	240 (600)	First sign of disease
	Leaf rust ¹ Valdensinia Leaf Spot ²	300 (760)	
	Mummy berry ²	240 – 320 (600 – 800)	1 st application: at early bloom for fruit rot
Low-growing berries except strawberries (Crop subgroup 13-07H) Bearberry, bilberry, blueberry (lowbush), cloudberry, cranberry, lingonberry, muntries, partridgeberry, cultivars, varieties, and/or hybrids of these.	Fruit rot	280 (700)	2 nd application: 5–10 days later after first application

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

¹Suppression ²Blueberries only

KEY DISEASES CONTROLLED (CONT'D)

Crop	Diseases	Rate ml/ac (ml/ha)	Timing
Sugarbeets			
Sugarbeets	Cercospora Leaf Spot	243–324 (600–800)	<p>Apply at the first sign of disease. Use higher rate and shorter intervals when conditions are favorable for severe disease pressure and/or when growing less disease-resistant varieties.</p> <p>Water Volume: 40–80 L of water per acre (ground application only)</p> <p>Repeat applications as needed using a 14- to 21-day spray interval depending on disease pressure.</p>
	Rhizoctonia Crown Rot	324 (800)	<p>At the 4-leaf to row closure growth stage.</p> <p>Water Volume: 20–40 L of water per acre.</p> <p>Repeat applications as needed using a 21-day spray interval.</p>

CROP ROTATIONS

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

PRE-HARVEST INTERVALS

- Bushberries: 7 days
- Corn (popcorn, sweet): 14 days
- Brassica carinata, Crambe : 36 days
- Low-growing berries (except strawberries): 45 days

GRAZING RESTRICTIONS

Do not graze livestock within 30 days of spraying.

STORAGE

Do not freeze.

KEY BENEFITS

- Technologically advanced formulation developed by and unique to ADAMA
- First Canadian product available with Asorbital® Formulation Technology
- Improved leaf penetration into the plant, improved efficacy
- Preventative, curative and eradicated control of multiple diseases in multiple crops
- Wide window of application

SORATEL®

REGISTERED AND SUPPORTED TANK MIXES

- Coragen®: Popcorn, Sweet corn, Sugarbeets
- Decis®: Blueberries, Saskatoon berries, Sweet corn, Sugarbeets
- SILENCER® 120 EC and ZIVATA™: Popcorn, Sweet corn

MIXING INSTRUCTIONS

1. Add ½ of the required amount of water to the spray or mixing tank and start agitation.
2. Add the required quantity of SORATEL® to the water and complete filling with water to the required total volume.
3. Maintain agitation throughout mixing and spraying.

HOW IT WORKS

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

ABOUT ASORBITAL® FORMULATION TECHNOLOGY

Asorbital® Formulation Technology was developed by and is unique to ADAMA worldwide. Products with this enhanced technology offer reduced run-off and photodegradation, improved rainfastness, increased amount of active in the plant and more thorough protection of the foliage.

SORATEL® was the first of many ADAMA products to come that will include Asorbital® Formulation Technology and be available to Eastern Canada growers in the future.



ADDITIONAL RESOURCES

AERIAL APPLICATION CHART	49
PHENOXY USE RATES	50
TANK-MIXING GUIDELINES	51
GENERAL CLEANING PRACTICES FOR SPRAYER EQUIPMENT.....	52
METRIC/IMPERIAL CONVERSIONS	53
GOVERNMENT & ASSOCIATION	
CONTACT INFO.....	54

AERIAL APPLICATION CHART

ADAMA PRODUCT NAME	AERIAL APPLICATION	WATER VOLUME
HERBICIDES		
ARMORY® 240	Yes	90–200 L/ac
ARROW ALL IN®	No	–
BROMOTRIL®	No	–
LEOPARD®	Yes	10 L/ac
PHANTOM® 240 SL	No	–
SQUADRON®	No	–
INSECTICIDES		
CORMORAN®	No	–
NIMITZ® 480 EC	No	–
SILENCER® 120 EC	Yes	4–16 L/ac
ZIVATA™	Yes	4–16 L/ac
FUNGICIDES		
BUMPER® 432 EC	Yes	16–20 L/ac
CAPTAN 80 WSP	Yes (with restrictions, see label)	See label
CAPTAN 480 SC		
FOLPAN® 80 WG	No	–
MAXENTIS®	Yes	20 L/ac
SORATEL®	Yes	20 L/ac

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.

TANK-MIXING GUIDELINES

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

W	Wettable powders, dispersible granules, soluble granules (WG, DF, SG, WP, SP)
A	Agitate tank mix thoroughly
M	Micro-encapsulated suspensions (ME)
L	Liquid flowables and suspensions (SC, SL, SN, LI, SU, SE)
E	Emulsifiable concentrate formulations (EC)
<i>Fill spray tank nearly full with water.</i>	
G	Glyphosate formulations
S	Surfactants

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

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
ARMORY® 240	W	1%S	W	
ARROW ALL IN®	W	D	W	
BROMOTRIL®	D	W		
LEOPARD®	W	1%A	1%A	W
PHANTOM® 240 SL	W			
SQUADRON®	D	D	D	W

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

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.

GOVERNMENT & ASSOCIATION CONTACT INFO

PROVINCIAL AG OFFICES:

Agriculture and Agri-Food Canada

1341 Baseline Road
Ottawa, ON K1A 0C5
Toll-free: 1.855.773.0241
Email: info@agr.gc.ca
agr.gc.ca

Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA)

1 Stone Road West
Guelph, ON N1G 4Y2
Phone: 519.826.3100
Toll-free in Ontario: 1.888.466.2372
Email: ag.info.omafra@ontario.ca
omafra.gov.on.ca

Nova Scotia Department of Agriculture

6th Floor (Suite 605), WTCC
Halifax, NS B3J 3N8
Phone: 902.424.4560
Toll-free: 1.800.279.0825
novascotia.ca/agri

New Brunswick Agriculture, Aquaculture and Fisheries

Agricultural Research Station
(Experimental Farm)
P.O. Box 6000
Fredericton, NB E3B 5H1
Phone: 506.453.2666
Email: DAAF-MAAP@gnb.ca
gnb.ca/AgricultureAquacultureFisheries

Prince Edward Island Department of Agriculture and Fisheries

5th Floor, Jones Building
11 Kent Street
P.O. Box 2000
Charlottetown, PEI C1A 7N8
Phone: 902.368.4880
Email: peiextension@gov.pe.ca
gov.pe.ca/agriculture

Quebec Ministry of Agriculture, Fisheries and Food (MAPAQ)

200 chemin Ste-Foy, 10^e étage
Québec, QC G1R 4X6
Toll-free: 1 888 222-6272
Email: info@mapaq.gouv.qc.ca
mapaq.gouv.qc.ca

ASSOCIATIONS AND COUNCILS:

Ontario Bean Growers

302-660 Speedvale Avenue West
Guelph, ON N1K 1E5
Phone: 519.803.9847
ontariobeans.on.ca

Canadian Special Crops Association

1215-200 Portage Avenue
Winnipeg, MB R3C 0A5
Phone: 204.925.3780
specialcrops.mb.ca

Ontario Fruit and Vegetable Growers' Association

105-355 Elmira Road North
Guelph, ON N1K 1S5
Phone: 519.763.6160
Email: info@ofvga.org
ofvga.org

Perennia

32 Main Street
Kentville, NS B4N 1J5
Téléphone : 902.678.7722
Courriel : info@perennia.ca
perennia.ca

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).

NOTES

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There is no text or other markings on the paper.



Formulation Mastery

ADAMA improves crop protection products based on your input to make them easier to use, more effective and more sustainable.



Penetration-optimized
ASORBITAL® Technology 
SORATEL®, SORADUO™ and MAXENTIS®



Plant-based Low VOC Technology 
ZIVATA® and BUMPER® 432 EC



High-Load Suspension Technology
Canada is looking at this for the future



Enhanced Rainfast Technology
Canada is looking at this for the future

Crop protection, built for you.

See our formulation mastery at
work by visiting AllinOnYou.ca





Agile Innovation

ADAMA leverages the world's largest library of active and your input to deliver innovative and improved products.



Complete Resistance Management Solutions



New combinations of actives



Multi-mode fungicides



Improved herbicide formulations



Novel actives



Fruit thinning options



New insect management tools



Science-based research to ensure Canadian farmers have options

ADAMA.COM

1.855.264.6262

 @AdamaEast

 @adama_canada

 AdamaCanadaEast

 ADAMA Agricultural
Solutions Canada Ltd.

®/™ ARMORY, ARROW ALL IN, BROMOTRIL, BUMPER, CORMORAN, FOLPAN, LEOPARD, MAXENTIS, NIMITZ, PHANTOM, SILENCER, SORATEL, and SQUADRON are registered trademarks, and ZIVATA is a trademark of ADAMA Agricultural Solutions Canada Ltd. All other products are trademarks of their respective companies.

© 2023 ADAMA Agricultural Solutions Canada Ltd.