Product Guide

Western Canada

You asked for effective products, we listened.
Finally a line of products that work for you.

@ADAMA_CAN
@ADAMACanada
1.855.264.6262

Always read and follow pesticide label directions.
A Plan for Peas

See our straightforward, innovative solutions made just for your crop.

♀ Herbicides
ARMORY™ 240, ARROW® 240 EC, ARROW ALL IN™, DAVAI™ 80 SL, PHANTOM® 240 SL, QUASAR™, SQUADRON®

♀ Insecticides
SILENCER® 120 EC

♀ Fungicides
TOPNOTCH™

With plans to introduce even more soon!
QUICK REFERENCE

CONTROL TIPS BY CROP
## QUICK REFERENCE

<table>
<thead>
<tr>
<th>Herbicides</th>
<th>Wheat</th>
<th>Durum Wheat</th>
<th>Winter Wheat</th>
<th>Barley</th>
<th>Oats</th>
<th>Field Corn</th>
<th>Soybeans</th>
<th>Dry Beans</th>
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### WEEDS

1 For pre-seed or post-harvest not applied direct to crops.
2 Pre-seed only.

### INSECTS

- CORMORAN™: 53
- PYRINEX® 480 EC: 59
- SILENCER® 120 EC: 61
- SOMBREÑO® 600 FS: 63

### DISEASES

- BUMPER® 432 EC: 67
- CUSTODIA™: 69
- ORIUS™ 430 SC: 71
- TOPNOTCH™: 73

Always read and follow pesticide label directions.
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<tr>
<th>Control Tips by Crop</th>
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<th>Lentils</th>
<th>Chickpeas</th>
<th>Canola</th>
<th>Flax</th>
<th>Sunflowers</th>
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1 For pre-seed or post-harvest not applied direct to crops.
Always read and follow pesticide label directions.
<table>
<thead>
<tr>
<th>Herbicide Name</th>
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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, soybeans and other crops.

ACTIVE INGREDIENT:
2,4-D Ester

CHEMISTRY GROUP:
Group 4

APPLICATION RATES AND PACKAGING:
- 2 x 10 L jug/case
- 120 L drum (rates vary)

REGISTERED CROPS:
- Wheat (spring, winter)
- Barley
- Fall rye
- Field corn
- Non-crop land
- Pastures
- Rye

WEEDS CONTROLLED:

<table>
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<tr>
<th>Susceptible Weed</th>
<th>Timing</th>
<th>Rate</th>
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<tr>
<td>Annual sow thistle</td>
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<tr>
<td>Bluebur</td>
<td>Before 4-leaf stage</td>
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</tr>
<tr>
<td>Burdock</td>
<td>Before 4-leaf stage</td>
<td></td>
</tr>
<tr>
<td>Cocklebur, Daisy fleabane, False flax, False ragweed, Flixweed, Giant ragweed, Goat’s beard, Kochia, Lamb’s quarters, Mustards (except Dog and Tansy)</td>
<td>Before 4-leaf stage</td>
<td>Small seedlings (2 – 4 leaf), growing rapidly, good growing conditions: 0.2 – 0.3 L/ac Large weeds, dry or cold weather, heavy infestations: 0.3 L/ac Resistance increases with age.</td>
</tr>
<tr>
<td>Narrow-leaved hawk’s beard</td>
<td>In fall, and at 1 – 2 leaf stage in spring</td>
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</tr>
<tr>
<td>Plantain, Prickly lettuce, Ragweeds, Redroot pigweed, Russian pigweed, Russian thistle, Shepherd’s purse, Stinging nettle, Stinkweed, Sweet clover (seedling), Thyme-leaved spurge</td>
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<tr>
<td>Volunteer canola¹</td>
<td>1 – 4 leaf stage</td>
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<td>Wild radish, Wild (prairie) sunflower</td>
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</table>

¹ All types.
## Harder-to-Control Weed

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Timing</th>
<th>Rate</th>
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</thead>
<tbody>
<tr>
<td>Curled dock</td>
<td>Before 4-leaf stage</td>
<td>Small seedlings (2 – 4 leaf), growing rapidly, good growing conditions: 0.4 – 0.5 L/ac</td>
</tr>
<tr>
<td>Dog mustard, Field pepper-grass, Flixweed (if treated before bolting in spring), Groundsel, Hairy galinsoga, Hawkweed, Heal-all</td>
<td>Before 4-leaf stage</td>
<td>Large weeds, dry or cold weather, heavy infestations: 0.5 L/ac</td>
</tr>
<tr>
<td>Knotweed</td>
<td>Before 4-leaf stage</td>
<td>Resistance increases with age.</td>
</tr>
<tr>
<td>Narrow-leaved hawk’s beard (if treated before bolting in spring), Oak-leaved goosefoot, Pineappleweed, Prostrate pigweed, Purslane, Sheep sorrel, Tansy mustard, Tumble pigweed, Velvetleaf</td>
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<tr>
<td>Volunteer canola(^1)</td>
<td>4 – 6 leaf stage</td>
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</table>

\(^1\)All types.

## Very-Hard-to-Control Weed

<table>
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<th>Herbicide</th>
<th>Timing</th>
<th>Rate</th>
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<tbody>
<tr>
<td>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</td>
<td>If treated before 4-leaf stage</td>
<td>Small seedlings (2 – 4 leaf), growing rapidly, good growing conditions: 0.4 – 0.5 L/ac</td>
</tr>
<tr>
<td>Hempnettle(^3)</td>
<td></td>
<td>Large weeds, dry or cold weather, heavy infestations: 0.5 L/ac</td>
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<tr>
<td>Hoary cress, Lady’s thumb(^2), Leafy spurge, Mouse-eared chickweed(^2), Perennial sow thistle, Russian knapweed, Scentless mayweed, Smartweed(^3), Tartary buckwheat, Teasel, Volunteer sunflower, Wild buckwheat(^2)</td>
<td>Controlled with applications before 4-leaf stage</td>
<td>Resistance increases with age.</td>
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<tr>
<td>Yellow rocket</td>
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</table>

\(^2\)Use highest listed rate for suppression.

### HOW IT WORKS:

Systemic activity hinders plant cell growth in newly forming stems and leaves promoting uncontrolled, unsustainable growth, causing stem curl-over, leaf withering and eventual plant death.
<table>
<thead>
<tr>
<th>Crop</th>
<th>Timing</th>
<th>Rate</th>
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</thead>
<tbody>
<tr>
<td>Barley, Rye, Wheat (spring, winter)</td>
<td>Pre-seed or pre-emergent</td>
<td>0.2 – 0.5 L/ac</td>
</tr>
<tr>
<td>Barley, Rye, Wheat (spring, winter)</td>
<td>4 leaf to flag leaf</td>
<td>Up to 0.5 L/ac</td>
</tr>
<tr>
<td>Winter wheat, Fall rye</td>
<td>Pre-seed or pre-emergent</td>
<td>0.2 – 0.5 L/ac</td>
</tr>
<tr>
<td>Winter wheat, Fall rye</td>
<td>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.</td>
<td>Up to 0.3 L/ac</td>
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<tr>
<td>Field corn</td>
<td>Before corn is 6 inches tall or 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.</td>
<td>Up to 0.3 L/ac</td>
</tr>
<tr>
<td>Established grasses for forage and seed production</td>
<td>In spring, up to shot blade of grasses or in fall after harvest. Application during flower or pollination development will reduce seed yield.</td>
<td>Up to 0.3 L/ac (for seed production) Up to 0.6 (hay and pasture crops)</td>
</tr>
<tr>
<td>Established pasture and rangeland</td>
<td>Apply at time of rapid growth, usually May, June or September. Apply after pasture has been grazed or cut and weed growth has resumed.</td>
<td>Up to 1.4 L/ac</td>
</tr>
<tr>
<td>Non-crop (stubble land, rights of ways, roadsides etc.)</td>
<td>Apply at time of rapid growth, usually May, June or September. A 2nd application may be required to control perennial weeds.</td>
<td>Up to 1.4 L/ac</td>
</tr>
</tbody>
</table>
2,4-D ESTER 700

WATER VOLUME:
- Ground: 12.5 – 50 L/acre
- Aerial: Minimum 12 L/acre

RAINFASTNESS:
Avoid applying when rain is forecast.

SUPPORTED TANK MIXES:
- Glyphosate
- Bromoxynil (BROMOTRIL® II)
- Tribenuron (Express® SG)
- BISON® 400 L
- BUMPER® 432 EC
- PYRINEX® 480 EC

MIXING INSTRUCTIONS:
1. ½ fill the tank with clean water.
2. Add the required amount of ADAMA 2,4-D Ester 700 and agitate thoroughly.
3. Add any tank-mix partners.
4. Fill the tank and agitate again before use.

CROP ROTATIONS:
No restrictions.

PRE-HARVEST INTERVAL:
90 days

GRAZING RESTRICTIONS:
30 days

STORAGE:
Store the container tightly closed away from seeds, fertilizer, plants and foodstuffs. May be stored at any temperature. Shake well before using.

QUICK TIPS:
Avoid spray drift to any desirable vegetation. Coarse sprays are less likely to drift. Do not spray during periods of high winds.
ARMORY™ 240

Provides more precise harvest timing with fast drydown of crops, protecting yield and grade, and reducing disease transmission late in the season.

ACTIVE INGREDIENT:
Diquat

CHEMISTRY GROUP:
Group 22

APPLICATION RATES AND PACKAGING:
- 2 x 10 L jugs/case
- 120 L drum
Beans, lentils, field peas, chickpeas, canola, mustard, flax, sunflowers:
  - Ground: 0.5 – 0.69 L/ac
  - Aerial: 0.69 – 0.93 L/ac
Legumes:
  - Ground: 0.69 – 1.09 L/ac
  - Aerial: 0.69 – 1.09 L/ac
Oats:
  - Ground: 0.36 – 0.51 L/ac
Potatoes:
  - Ground: 0.51 – 1.42 L/ac
  - Aerial: 0.69 – 0.93 plus 0.51 L/ac
Sweet white lupins:
  - Ground: 0.93 L/ac
Vegetables:
  - Ground: 0.93 – 1.86 L/ac
Fruit:
  - Ground: 1.86 L/ac

REGISTERED CROPS:
- Beans
- Canola
- Chickpeas
- Flax
- Legumes
- Lentils
- Mustard
- Oats
- Field peas
- Potatoes
- Sunflowers
- Sweet white lupins

USES AND WEEDS CONTROLLED:
- Potato vines
- Corn spurry in oats
- Weeds in stale seedbeds (vegetables and field crops)
- Weeds in vegetables (inter-row directed)
- Weeds in non-crop land
- Suppression of perennial grasses under apple trees

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.

WATER VOLUME:
90 – 200 L/ac

RAINFASTNESS:
30 minutes
SUPPORTED TANK MIXES:
- Agral® 90
- LI 700°
- Liberate®
- Other non-ionic surfactants

MIXING INSTRUCTIONS:
Use LI 700 wetting and spreading agent at 2.5 L per 1000 L of spray solution (0.25%) or Agral® 90, wetting and spreading agent, at a rate of 1 L for each 1000 L of spray mixture unless otherwise stated.

GRAZING RESTRICTIONS:
Do not graze the treated areas or cut for hay.

STORAGE:
Store above 0 C.

QUICK TIPS:
Avoid morning and evening applications. Suggested conditions for aerial applications is a temperature below 25 C, humidity above 50% and wind speed below 9 km/h at flying height.
Get broad-spectrum grassy weed control in canola, pulses and other broadleaf and specialty crops.

**ACTIVE INGREDIENT:** Clethodim  
**CHEMISTRY GROUP:** Group 1

**APPLICATION RATES AND PACKAGING:**
- 50 ml/ac for light infestations or 60 ac/case
- 80 ml/ac for moderate infestations or 40 ac/case
- 150 ml/ac for quack grass or 20 ac/case
- 1 x 3 L jug + 1 x 9 L jug of X-ACT® adjuvant

**REGISTERED CROPS:**
- Alfalfa, seedling
- Beans
- Canola
- Chickpeas
- Coriander
- Cranberries
- Fenugreek
- Flax
- Highbush blueberries
- Lentils
- Linola™
- Mustard
- Onion
- Field peas
- Potatoes
- Prairie carnation
- Soybeans
- Spinach
- Sunflowers

**WEEDS CONTROLLED:**

<table>
<thead>
<tr>
<th>Grass Species</th>
<th>Leaf Stage</th>
<th>Application Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foxtail (green, yellow), Wild oats, Volunteer cereals (wheat, barley, oats)</td>
<td>2 – 4</td>
<td>50 ml/ac</td>
</tr>
<tr>
<td>Barnyard grass, Fall panicum, Proso millet, Volunteer corn, Volunteer canarygrass, Witch grass</td>
<td>2 – 6</td>
<td>50 ml/ac</td>
</tr>
<tr>
<td>Barnyard grass, Crabgrass (smooth, large), Fall panicum, Foxtail (green, yellow), Persian darnel, Proso millet, Quack grass suppression, Volunteer canarygrass, Volunteer cereals (wheat, barley, oats), Volunteer corn, Wild oats, Witch grass</td>
<td>2 – 6</td>
<td>80 ml/ac</td>
</tr>
<tr>
<td>Quack grass control</td>
<td>2 – 6</td>
<td>150 ml/ac</td>
</tr>
</tbody>
</table>

**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.
**ARROW® 240 EC**

**WATER VOLUME:**
- Ground application only
- 20 – 90 L/ac to achieve uniform spray coverage

**RAINFASTNESS:**
1 hour

**SUPPORTED TANK MIXES:**
Herbicides:
- Canola: Lontrel® or Muster®
- Clearfield® canola only: Imazethapyr (PHANTOM® 240 SL)
- LibertyLink® canola only: Liberty®
- Field peas: Imazethapyr (PHANTOM® 240 SL), DAVAI™ 80 SL, Solo® ADV
- Flax, including low linolenic acid varieties: Bromoxynil + MCPA ester (BADGE® II) or Curtail® M
- Flax, not including low linolenic: Lontrel® or MCPA ester
- Glyphosate-tolerant soybeans: Glyphosate
- Soybeans: DAVAI™ 80 SL, Solo® ADV

**MIXING INSTRUCTIONS:**
1. Fill clean spray tank ½ full with water. Start agitation.
2. Add the correct amount of ARROW® 240 EC. Continue to agitate.
3. Add the correct amount of adjuvant X-ACT® along with the remaining amount of water necessary to fill the spray tank.
4. Continue to agitate or run the bypass system.
5. After any break in the spraying operation, agitate thoroughly before spraying again.
6. Do not allow the mixture to sit overnight.
7. If tank mixing, follow label directions for each tank-mix partner.

**CROP ROTATIONS:**
No restrictions when applied alone.

**PRE-HARVEST INTERVALS:**
- Alfalfa, Fenugreek: 30 days
- Blueberries, Spinach: 14 days
- Canola, Coriander, Beans, Flax (including low linolenic), Lentils, Potatoes, Chickpeas, Mustard: 60 days
- Onion: 45 days
- Soybeans, Field peas: 75 days
- Sunflowers: 72 days

**GRAZING RESTRICTIONS:**
Do not cut treated crops for feed or graze until 60 days after application.

**STORAGE:**
- May be stored at any temperature.
- Shake well before use.

**QUICK TIPS:**
ARROW® 240 EC works best when applied to actively growing weeds. Regrowth of tillers may occur if applied to weeds under stress conditions. ARROW® 240 EC must be used with the adjuvant X-ACT®.
ARROW ALL IN™

A superior formulation of grassy weed control in canola, soybeans, pulses and a variety of specialty crops with the convenience of a built-in surfactant. This advanced formulation is the only one available in Canada.

ACTIVE INGREDIENT: Clethodim 120 g/L  
CHEMISTRY GROUP: Group 1

APPLICATION RATES AND PACKAGING:
- 150 ml/ac for standard rate or 80 ac/case
- 100 ml/ac for light infestations and easier-to-control weeds or 120 ac/case
- 300 ml/ac for quack grass control or 40 ac/case
- 2 x 6 L jugs/case

REGISTERED CROPS:
- Alfalfa, seedling
- Beans, dry (pinto, black, great northern, red, pink, navy)
- Canola
- Carnations
- Chickpeas (desi, kabuli)
- Coriander
- Cranberries
- Fenugreek
- Field peas
- Flax
- Highbush blueberries
- Lentils
- Mustard (oriental, brown, yellow)
- Onions, dry
- Potatoes
- Soybeans
- Spinach
- Sunflowers

WEEDS CONTROLLED:

<table>
<thead>
<tr>
<th>Grass Species</th>
<th>Leaf Stage</th>
<th>Application Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foxtail (green, yellow), Wild oats, Volunteer cereals (wheat, barley, oats)</td>
<td>2 – 4</td>
<td>100 ml/ac</td>
</tr>
<tr>
<td>Barnyard grass, Fall panicum, Proso millet, Volunteer corn, Volunteer canarygrass, Witch grass</td>
<td>2 – 6</td>
<td>100 ml/ac</td>
</tr>
<tr>
<td>Barnyard grass, Crabgrass (smooth, large), Fall panicum, Foxtail (green, yellow), Persian darnel, Proso millet, Quack grass suppression, Volunteer canarygrass, Volunteer cereals (wheat, barley, oats), Volunteer corn, Wild oats, Witch grass</td>
<td>2 – 6</td>
<td>150 ml/ac</td>
</tr>
<tr>
<td>Quack grass control</td>
<td>2 – 6</td>
<td>300 ml/ac</td>
</tr>
</tbody>
</table>

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.
WATER VOLUME:
- Recommended: 40 L/ac
- Ground application only

RAINFASTNESS:
- 1 hour

SUPPORTED TANK MIXES:
- Flax: BADGE® II (including low-linolenic varieties); MCPA ester (does not include low-linolenic varieties); Curtail™ 360 (does not include low-linolenic varieties)
- Canola: Lontrel™ 360; Muster®; Imazethapyr (PHANTOM® 240 SL or Pursuit®) (imazethapyr-tolerant canola only); Liberty® (glufosinate ammonia-tolerant canola varieties)
- Field peas: Imazethapyr (PHANTOM® 240 SL or Pursuit®); DAVAI™ 80 SL (imazamox); QUASAR™
- Soybeans (glyphosate-tolerant): Glyphosate, DAVAI™ 80 SL, PHANTOM® 240 SL or Pursuit®; QUASAR™

MIXING INSTRUCTIONS:
1. Thoroughly clean the sprayer by flushing the system with water containing detergent.
2. Fill clean spray tank ½ full with clean water. Start agitation system.
3. Add the required amount of the tank-mix partner. Continue to agitate.
4. Add the correct amount of ARROW ALL IN™. Continue to agitate.
5. Continue to add the remaining amount of water to fill the spray tank. Continue to agitate.
6. After any break in the spraying operation, agitate thoroughly before spraying again. Check inside the tank to ensure that sprayer agitation is sufficient to re-mix the spray materials. Do not allow the mixture to sit overnight. In the case of tank mixtures with broadleaf herbicides, settling will occur if agitation is not continuous.
7. If an oil film starts to build up in the tank, drain it and clean the tank with a strong detergent solution.
8. Immediately after use, thoroughly clean the sprayer by flushing the system with clean water containing detergent.

CROP ROTATIONS:
- Alfalfa (seedling), Cranberries, Fenugreek: 30 days
- Canola, Chickpeas (desi, kabuli), Coriander, Dry beans (pinto, black, great northern, red, pink, navy), Flax (including low-linolenic acid varieties), Lentils, Mustard (oriental, brown, yellow) (condiment type only), Potatoes: 60 days
- Dry onions: 45 days
- Field peas, Soybeans: 75 days
- Highbush blueberries, Spinach: 14 days
- Sunflowers: 72 days

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.
BADGE® II

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

ACTIVE INGREDIENTS:
Bromoxynil and MCPA ester

CHEMISTRY GROUPS:
Group 4 (MCPA ester) and Group 6 (bromoxynil)

APPLICATION RATES AND PACKAGING:
- 0.5 L/ac or 1 case treats 40 acres
- 2 x 10 L jug/case
- 120 L drum treats 240 acres

REGISTERED CROPS:
Field crops:
- Barley
- Canary seed
- Corn
- Fall rye
- Flax
- Oats
- Timothy (established for seed production)
- Wheat (spring, winter, durum)

Seedling grasses:
- Bromegrass
- Creeping red fescue
- Crested wheatgrass
- Intermediate wheatgrass
- Meadow fescue
- Meadow foxtail
- Reed canarygrass
- Russian wild rye
- Seedling meadow bromegrass
- Seedling tall fescue
- Slender wheatgrass
- Tall wheatgrass
- Timothy

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
- Velvetleaf²
- Volunteer canola (all types)
- Volunteer sunflower
- Wild buckwheat
- Wild mustard
- Wild tomato
- Wormseed mustard

¹Top growth control.
²Up to 4-leaf stage.
³Spray before plants are 2 inches high.
⁴Spring annual only.
⁵Spray before plants are 3 inches high.

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:

<table>
<thead>
<tr>
<th>Crop</th>
<th>Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barley, Oats, Spring wheat (including durum)</td>
<td>2 leaf to early flag</td>
</tr>
<tr>
<td>Canary seed</td>
<td>3 – 5 leaf</td>
</tr>
<tr>
<td>Corn</td>
<td>4 – 6 leaf</td>
</tr>
<tr>
<td>Fall rye</td>
<td>When growth commences in spring to early flag leaf.</td>
</tr>
<tr>
<td>Flax, Solin</td>
<td>2 inches to early bud stage. Best tolerance occurs when flax is 2 – 4 inches tall.</td>
</tr>
<tr>
<td>Seedling grasses</td>
<td>2 – 4 leaf</td>
</tr>
<tr>
<td>Timothy (established for seed production)</td>
<td>Prior to shot blade in the seed production year.</td>
</tr>
<tr>
<td>Winter wheat</td>
<td>2 – 4 leaf stage in the fall or after growth resumes up to early flag leaf.</td>
</tr>
</tbody>
</table>

WATER VOLUME:
- Ground: 20 – 40 L/ac in cereals and flax; 80 – 120 L/ac in corn; 60 L/ac in forages
- Aerial: 8 – 20 L/ac

RAINFASTNESS:
- 1 hour

SUPPORTED TANK MIXES:
- Corn: Atrazine
- Flax and Solin: Clethodim (ARROW® 240 EC, ARROW ALL IN™) or Poast®
- Oats: MCPA ester
- Spring wheat and barley: Ally®, Avenge®, MCPA ester, Refine® SG or tralkoxydim (BISON® 400 L)
- Spring wheat only: Axial®, clodinafop (LADDER ALL IN™) or Everest®
- Winter wheat: Refine Extra®

MIXING INSTRUCTIONS:
1. Fill clean spray tank ½ full with water.
2. Add the required amount of BADGE® II and agitate thoroughly.
3. Fill the tank and agitate again before use.
4. When tank mixing, follow instructions on both labels.

CROP ROTATIONS:
No re-cropping restrictions the year after treatment.

PRE-HARVEST INTERVAL:
Flax or Solin: 60 days

STORAGE:
Avoid freezing.

GRAZING RESTRICTIONS:
- Do not graze treated grain or established timothy crops or cut for feed within 30 days of application.
- Do not graze meadow foxtail in the year of treatment.
- Do not graze other treated forage grasses within 56 days of treatment.

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

Always read and follow pesticide label directions.
HERBICIDE

BISON® 400 L

Get a wide window of application and excellent control of Persian darnel, wild oats and other grassy weeds in cereals and seedling forage grasses grown for seed. It gives you tank-mix flexibility with more than 20 different broadleaf herbicides.

ACTIVE INGREDIENT:
Tralkoxydim

CHEMISTRY GROUP:
Group 1

APPLICATION RATES AND PACKAGING:
- 200 ml/ac or 40 ac/case
- 1 x 8 L jug BISON® 400 L + 1 x 8 L jug Addit® adjuvant per case

REGISTERED CROPS:
Field crops:
- Barley
- Rye (spring, winter)
- Triticale
- Wheat (spring, durum, winter)
Cereal crops underseeded to forage legumes:
- Alfalfa
- Birdsfoot trefoil
- Clovers
- Sainfoin

WEEDS CONTROLLED:

<table>
<thead>
<tr>
<th>Weed</th>
<th>Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild oats, Volunteer oats</td>
<td>1 – 6 leaf (Zadoks 11, 20 – 14, 22)</td>
</tr>
<tr>
<td>Green foxtail, Yellow foxtail</td>
<td>1 – 5 leaf (Zadoks 11, 20 – 14, 21)</td>
</tr>
<tr>
<td>Barnyard grass, Persian darnel</td>
<td>1 – 4 leaf (Zadoks 11 – 14)</td>
</tr>
</tbody>
</table>

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.

WATER VOLUME:
- Ground: 20 – 40 L/ac
- Aerial: 12 – 18 L/ac

RAINFASTNESS:
1 hour
**BISON® 400 L**

**SUPPORTED TANK MIXES:**
Do not apply any broadleaf herbicide tank mixes to underseeded forage legumes.

**Herbicides:**
- 2,4-D ester
- Attain®
- Bromoxynil (BROMOTRIL® II)
- Bromoxynil + 2,4-D ester
- Bromoxynil + MCPA ester (BADGE® II)
- Curtail® M
- Dichlorprop + 2,4-D ester
- ESTEEM™
- Fluroxypyr + 2,4-D ester (RUSH® 24)
- Fluroxypyr + MCPA ester
- Lontrel®
- MCPA ester
- OcTain™ XL
- Pixxaro™
- Prestige™ XC
- Starane®

**Insecticides:**
- Decis®
- Lambda-cyhalothrin (SILENCER® 120 EC)

**MIXING INSTRUCTIONS:**
1. Begin to fill spray tank or premix 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 premix tank is 3/4 full of water, add BISON® 400 L. If more than 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. If tank mixing, add the recommended product(s) next.
5. Add Addit® adjuvant, and continue to fill tank to desired level with water.

**CROP ROTATIONS:**
Do not reseed treated areas to tame oats or corn for at least 4 weeks after application.

**PRE-HARVEST INTERVAL:**
60 days

**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:**
- Store above -5 C.
- Shake well before use.

**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.
BRAZEN™ II

Provides selective control of wild oats, green foxtail, yellow foxtail, Persian darnel, volunteer oats, volunteer canary seed and proso millet in spring wheat and barley.

ACTIVE INGREDIENTS:
Pinoxaden 100 g/L
Contains Cloquintocet-mexyl at 25 g/L as a safener

CHEMISTRY GROUP:
Group 1

APPLICATION RATES AND PACKAGING:

- 9.7 L BRAZEN™ II + 11.3 L Cohere® Adjuvant

<table>
<thead>
<tr>
<th>Crop</th>
<th>Weeds Controlled</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring wheat, Barley</td>
<td>Persian darnel</td>
<td>BRAZEN™ II at 160 ml/ac + Cohere® Adjuvant at 280 ml/ac</td>
</tr>
<tr>
<td></td>
<td>Wild oats, Green and yellow foxtail, Volunteer oats, Volunteer canary seed, Proso millet</td>
<td>BRAZEN™ II at 240 ml/ac + Cohere® Adjuvant at 280 ml/ac</td>
</tr>
</tbody>
</table>

REGISTERED CROPS:

- Spring wheat
- Barley

WEEDS CONTROLLED:

- Wild oats
- Green foxtail
- Yellow foxtail
- Persian darnel
- Volunteer oats
- Volunteer canary seed
- Proso millet

HOW IT WORKS:

BRAZEN™ II is absorbed by the leaves and is rapidly translocated to the growing points of leaves and stems. Thorough coverage of the plants is essential for consistent control. Actively growing susceptible grasses stop growing within 48 hours of treatment. Depending on species, growing conditions and crop competition, leaves and growing points turn yellow within 1–3 weeks after application. Further colour changes and loss of vigour will be observed, followed by a browning and control 3–5 weeks after application.

CROP STAGING:

<table>
<thead>
<tr>
<th>Crops/Weeds</th>
<th>Growth Stage (ZADOKS or BBCH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring wheat, Barley</td>
<td>1 leaf to flag leaf stage (BBCH 11 – 45)</td>
</tr>
<tr>
<td>Wild oats, Green and yellow foxtail, Volunteer oats, Volunteer canary seed, Proso millet, Persian darnel</td>
<td>1 – 6 leaf, prior to 4th tiller (BBCH 11 – 23)</td>
</tr>
</tbody>
</table>

WATER VOLUME:

- 50–100 L/ha or 20–40 L/ac by ground
RAINFASTNESS:
1 hour

REGISTERED AND SUPPORTED TANK MIXES1:
- Refine® SG Toss-N-Go® Herbicide2
- Refine® SG Toss-N-Go® Herbicide + MCPA Ester3 500
- Refine® SG Herbicide
- Refine® SG Herbicide + MCPA Ester3 500
- BADGE® II
- Buctril® M4
- TOPLINE® or Frontline™ Herbicide Tank Mix5
- Frontline™ XL Herbicide
- Curtail® M4
- ESTEEM™ or Prestige™ Herbicide Tank Mix4
- Trophy®64 Herbicide Tank Mix
- MCPA Ester4 (assume 500 series)
- MCPA Ester4 (assume 600 series)
- MCPA Amine (assume 500 series)
- GF-184
- Infinity® Herbicide4
- OUTSHINE® + MCPA LV Ester 600

1 Always consult the label of the broadleaf herbicide prior to use.
2 Addition of surfactants other than ADAMA Adjuvant 80 are not required.
3 Suppression only of green foxtail.
4 For control of common ragweed and suppression of round-leaved mallow.

MIXING INSTRUCTIONS:
1. Clean spray tank and ½ fill with clean water. Start agitation or bypass system.
2. If a broadleaf herbicide is to be used, add the product first prior to adding BRAZEN™ II and agitate for 2-3 minutes.
3. Add correct amount of BRAZEN™ II.
4. Agitate for 2-3 minutes.
5. Add correct amount of ADAMA Adjuvant 80.
6. Agitate for 1-2 minutes before adding remainder of water and then maintain constant agitation.
7. After any break in spraying operations, agitate thoroughly before spraying again.
8. Use the spray suspension as soon as it is prepared.

CROP ROTATIONS:
There are no crop rotation limitations the year following application of BRAZEN™ II.

PRE-HARVEST INTERVALS: GRAZING RESTRICTIONS:
- Grain, Straw: 60 days 7 days
- Hay: 30 days

STORAGE:
- Store in closed original container in a well-ventilated room.
- Keep out of reach of children, unauthorized persons and animals.
- Store separate from food, feed and fertilizer.

QUICK TIPS:
Apply to actively growing weeds for best results. An early application will maximize crop yields by reducing weed competition. Weeds emerging after application of BRAZEN™ II will not be controlled. Although BRAZEN™ II does not control broadleaf weeds, BRAZEN™ II can be tank mixed with a range of broadleaf herbicides to provide broad spectrum weed control in spring wheat and barley.

Always read and follow pesticide label directions.
Tough broadleaf weed control with tank-mix flexibility and excellent crop safety.

**ACTIVE INGREDIENT:** Bromoxynil

**CHEMISTRY GROUP:** Group 6

**APPLICATION RATES AND PACKAGING:**
- 0.49 – 0.57 L/ac or 40 – 34 ac/case
- 2 x 9.7 L jugs/case
- Post-Emergent Rate: 0.49 – 0.57L/ac or 34 – 40 ac/case
- Pre-Seed: BROMOTRIL® II at 0.49 L/ac (40 ac/case) tank mixed with glyphosate at a rate of 175 g a.i./ac

**REGISTERED CROPS:**

<table>
<thead>
<tr>
<th>Crop</th>
<th>Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barley, Oats, Wheat</td>
<td>Pre-seed burn-off with glyphosate</td>
</tr>
</tbody>
</table>

**Crop** | **Crop Leaf Stage**
--- | ---
Alfalfa (seedling) | 2 – 6 trifoliate
Alfalfa (established) | Spring: before the crop begins to shield the weeds
Barley, Oats, Triticale, Wheat (spring, durum) | 2 leaf to early flag
Winter wheat | Fall: 2 – 4 leaf Spring: first growth to early flag
Corn (field, sweet) with drop pipes | Beyond 8 leaf
Canary seed (seed production only) | 3 – 5 leaf
Fall rye | Spring: from first growth to early flag
Flax | 2 – 4 inches in height
Forage millet, Sorghum | 4 leaf to 8 inches
Seedling grasses (seed production only): Bromegrass, Fescue (creeping red, meadow), Orchard grass, Reed canarygrass, Russian wildrye, Timothy, Wheatgrass (crested, intermediate, slender, tall) | 2 – 4 leaf (year of establishment only)

**WEEDS CONTROLLED:**

Seeding up to 4-leaf stage:
- American nightshade
- Bluebur
- Cocklebur
- Common ragweed
- Cow cockle
- Green smartweed
- Kochia
- Lady’s thumb
- Pale smartweed
- Pigweed
- Russian thistle
- Stinkweed
- Velvetleaf
- Wild mustard
- Wild buckwheat

Seeding up to 8-leaf stage:
- Common buckwheat
- Common groundsel
- Lamb’s quarters
- Tartary buckwheat

1 In 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.
2 Spray before plants are 2 inches high.
3 Spray before plants are 3 inches high.
HOW IT WORKS:
BROMOTRIL® II 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.

WATER VOLUME:
- Ground: 20 – 40 L/ac
- Air (wheat and barley only): 8 – 16 L/ac

RAINFASTNESS:
30 minutes

SUPPORTED POST-EMERGENT TANK MIXES:
Herbicides:
- Spring wheat: 2,4-D ester, Avenge®, clodinafop-propargyl (LADDER ALL IN™, MCPA ester, tralkoxydim (BISON® 400 L)
- Winter wheat: 2,4-D ester, MCPA ester, tralkoxydim (BISON® 400 L)
- Barley: 2,4-D ester, Avenge®, MCPA ester, tralkoxydim (BISON® 400 L)
- Oats: MCPA ester
- Corn: Accent®, Atrazine, Banvel®, Ultim®
- Fall rye: MCPA ester
- Flax: MCPA ester or MCPA-K
- Canary seed: MCPA ester
- Seedling grasses: MCPA ester

Fungicides:
- BUMPER® 432 EC

MIXING INSTRUCTIONS:
1. Fill spray tank ½ full with water.
2. Add required amount of BROMOTRIL® II. Begin agitation.
3. If tank mixing, add the recommended amount of the tank-mix partner product to the spray tank first, agitate and then add BROMOTRIL® II (unless otherwise directed by the BROMOTRIL® II and tank-mix partner label).
4. Add the remaining amount of water while agitation continues.

CROP ROTATIONS:
If applying pre-seed, only apply prior to wheat, barley and oats.

PRE-HARVEST INTERVAL:
30 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:
Avoid freezing.

QUICK TIPS:
Avoid spraying if temperatures are above 25 C. Leaf scorching may occur in corn and flax 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.

Always read and follow pesticide label directions.
DAVAI™ 80 SL

Broadleaf and grassy weed control in a convenient package that allows for flexible tank-mix options in field peas, dry beans and soybeans. DAVAI™ 80 SL is eligible for Bayer’s Mix It Up Rewards™.

ACTIVE INGREDIENT:
Imazamox

CHEMISTRY GROUP:
Group 2

APPLICATION RATES AND PACKAGING:
· 100 ml/ac
· 2 x 8 L case
· Must be used with an appropriate surfactant (see label)

REGISTERED CROPS:
· Field peas
· Dry beans
· Soybeans

WEEDS CONTROLLED:
Broadleaf weeds: cotelydon to 4 leaf; Grasses: 1 – 4 true leaf:
· Barnyard grass
· Cleavers
· Cow cockle
· Flixweed
· Green foxtail
· Green smartweed
· Japanese brome grass
· Lamb’s quarters
· Persian darnel
· Redroot pigweed
· Shepherd’s purse
· Stinkweed
· Stork’s bill
· Volunteer barley
· Volunteer canary seed
· Volunteer canola
· Volunteer tame oats
· Volunteer wheat
· Wild buckwheat
· Wild mustard
· Wild oats
· Yellow foxtail

1 Suppression.

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 death 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:

<table>
<thead>
<tr>
<th>Crop</th>
<th>Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry beans, Soybeans</td>
<td>Emergence to 3 expanded trifoliate leaves</td>
</tr>
<tr>
<td>Field peas</td>
<td>1–6 true leaf stage</td>
</tr>
</tbody>
</table>

WATER VOLUME:
40 L/ac

RAINFASTNESS:
Avoid application when heavy rain is forecasted.
DAVAI™ 80 SL

SUPPORTED TANK MIXES:
- ARROW ALL IN™
- ARROW® 240 EC
- PHANTOM® 240 SL
- Assure® II
- Basagran® Forté
- Broadloom®

MIXING INSTRUCTIONS:
1. Use 40 L/ac of water.
2. Use a 50-mesh (or coarser) filter screen.
3. Fill the spray tank ¾ full with water.
4. Add the required amount of DAVAI™ 80 SL herbicide solution directly into the sprayer through the tank opening.
5. Agitate until herbicide is thoroughly mixed.
6. Continue agitation and add the required amount of the tank-mix partner.
7. Continue agitation while adding the required amount of recommended adjuvant.
8. If excess foaming occurs, a silicone anti-foaming agent may be added (e.g. Halt®).
9. Complete filling the tank to the desired level with water.

CROP ROTATIONS:
- Barley
- Canary seed
- Canola
- Chickpeas
- Corn
- Field peas
- Flax
- Lentils
- Oats
- Soybeans
- Clearfield® sunflowers
- Wheat (spring, durum)

PRE-HARVEST INTERVALS:
- Field peas: 60 days
- Dry beans: 75 days
- Soybeans: 85 days

GRAZING RESTRICTIONS:
Do not graze treated crop. Field peas may be fed to livestock 30 days after application.

STORAGE:
- Store above 5 C in original, tightly-closed container.
- Do not ship or store near food, feed, seed and fertilizers.
- Store in a cool, dry, locked, well-ventilated area without floor drain.
- Keep from freezing.

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.

⚠️ Always read and follow pesticide label directions.
ESTEEM™

Superior control of hard to control broadleaf weeds like thistle, cleavers and Kochia in barley, spring wheat and durum.

ACTIVE INGREDIENT:
Fluroxypyr 180 g/L, MCPA ester 600 g/L and Clopyralid 360 g/L

CHEMISTRY GROUP:
Group 2

APPLICATION RATES AND PACKAGING:
· 1 co-pack case includes: 9.6 L jug fluroxypyr 180 + 11.01 L MCPA ester 600 + 3.34 L ADAMA clopyralid 360
· 30 (high rate) to 40 (low rate) acres per co-pack case

REGISTERED CROPS:
· Barley
· Wheat (spring, durum)

WEEDS CONTROLLED:
At the low rate of 40 ac/case or 605 ml/ac: (240 ml/ac of 180 g/L fluroxypyr 180; 280 ml/ac of 600 g/L MCPA ester 600; 84 ml/ac of 360 g/L ADAMA clopyralid 360) will control:
Wild buckwheat, burdock, cleavers, Canada thistle (low infestations), cocklebur, field horsetail (top growth), volunteer flax, flixweed, Kochia, lamb’s quarters, wild mustard, plantain (top growth), prickly lettuce, ragweeds, shepherd’s purse, stinkweed, stork’s bill, volunteer sunflowers, annual sunflowers, vetch, wild radish

At the high rate of 30 ac/case or 800 ml/ac: 320 ml/ac of 180 g/L fluroxypyr 180; 365 ml/ac of 600 g/L MCPA ester 600; 110 ml/ac of 360 g/L ADAMA clopyralid 360) will control:
Tartary buckwheat, Canada thistle (medium to high infestations, season long control), volunteer canola, chickweed, dandelions, common groundsel, hempnettle, roundleaf mallow, redroot pigweed, Russian pigweed, scentless chamomile, smartweed, annual sow-thistle, perennial sow-thistle (season long control)

HOW IT WORKS:
The components of ESTEEM™ move 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.

CROP STAGING:
3-leaf stage to just before flag emergence

WATER VOLUME:
· Ground: 20 – 40 L/ac or 5 – 10 gal/ac
· Aerial: 12 – 20 L/ac or 3 – 5 gal/ac

RAINFASTNESS:
4 hours
SUPPORTED TANK MIXES:
- BISON® 400 L
- BRAZEN™ II
- LADDER ALL IN™
- Liquid Achieve™
- Horizon®
- Assert® 300 SC
- Puma®
- Avenge® 200-C
- Axial®
- BroadBand®
- Varro®

MIXING INSTRUCTIONS:
1. ½ fill the tank with clean water.
2. Add the required amount of MCPA ester and fluroxypyr, agitate thoroughly.
3. Add any tank-mix partners, agitate thoroughly.
4. Add the required amount of ADAMA clopyralid, agitate thoroughly.
5. Fill the tank and agitate again before using.

CROP ROTATIONS:
Barley, canola, flax, forage grasses, mustard, oats, rye and wheat can be seeded the following year

PRE-HARVEST INTERVAL:
Do not harvest treated crop within 60 days of application.

GRAZING RESTRICTIONS:
Do not graze livestock within 7 days of application.

STORAGE:
Do not freeze.

Always read and follow pesticide label directions.
ACTIVE INGREDIENTS:
Fluroxypyr, bromoxynil and MCPA ester

CHEMISTRY GROUPS:
Group 4 (MCPA ester, fluroxypyr) and Group 6 (bromoxynil)

APPLICATION RATES AND PACKAGING:
- 2 x 10 L bromoxynil/MCPA ester + 9.6 L fluroxypyr or 40 ac/case
- 2 x 120 L bromoxynil/MCPA ester + 115.2 L fluroxypyr treats 480 acres

REGISTERED CROPS:
- Wheat (spring, winter, durum)  ·  Barley

WEEDS CONTROLLED:
- American nightshade
- Bluebur
- Burdock
- Canada thistle1
- Chickweed
- Cleavers (including Group 2 resistant biotypes)
- Cockelbur
- Common groundsel
- Cow cockle
- Flixweed
- Hempnettle
- Kochia (including Group 2 and glyphosate-resistant biotypes)
- Lady’s thumb
- Lamb’s quarters
- Night-flowering catchfly
- Perennial sow thistle
- Redroot pigweed
- Russian thistle
- Shepherd’s purse
- Smartweed
- Stinkweed
- Vetch
- Volunteer canola
- Volunteer sunflower
- Wild buckwheat
- Wild mustard (including Group 2 resistant biotypes)
- Wild radish
- Wormseed mustard

1Top growth control.

HOW IT WORKS:
Quickly causes plants to stop growing. Convenient co-pack controls a wide range of weeds, including glyphosate-resistant and Group 2 resistant kochia, Group 2 resistant cleavers and Group 2 resistant wild mustard.

CROP STAGING:

<table>
<thead>
<tr>
<th>Crop</th>
<th>Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>2 leaf to early flag</td>
</tr>
<tr>
<td>Barley</td>
<td>2 leaf to early flag</td>
</tr>
</tbody>
</table>

WATER VOLUME:
Ground: 20 – 40 L/ac

RAINFASTNESS:
1 hour
SUPPORTED TANK MIXES:
Wheat:
- Tralkoxydim (BISON® 400 L)
- Clodinafop (LADDER ALL IN™)
- Simplicity®
- Thifensulfuron/tribenuron for suppression of narrow-leaved hawk’s beard
- Refine® SG
Durum:
- Clodinafop (LADDER ALL IN™)
- Simplicity®
Barley:
- Tralkoxydim (BISON® 400 L)
- Thifensulfuron/tribenuron for suppression of narrow-leaved hawk’s beard

MIXING INSTRUCTIONS:
1. Fill spray tank ½ full with water.
2. Add the required amount of FORCEFIGHTER® M and agitate thoroughly.
3. Add any tank-mix partners.
4. Fill the tank and agitate again before use.

CROP ROTATIONS:
Can be seeded the following year to barley, canola, flax, forage grasses, lentils, mustard, field peas, rye and wheat.

PRE-HARVEST INTERVAL:
60 days

GRAZING RESTRICTIONS:
30 days

STORAGE:
Store in a heated facility. If product is frozen, bring to room temperature and agitate well before use.

QUICK TIPS:
FORCEFIGHTER® M’s activity is influenced by weather conditions. The optimal temperature is 12–24 C. Avoid application 3 days before or after frost. Do not apply before the 2-leaf stage as crop injury may occur. Use 38 L/ac application volume when there is a heavy canopy or when most weeds are at an advanced stage of growth. Do not apply by air.
HOTSHOT®

A powerful glyphosate tank-mix partner for pre-seed burn-off that controls a wide range of annual broadleaf weeds including Group 2 and Group 9 resistant kochia, volunteer canola including glyphosate-resistant varieties, wild buckwheat, dandelion and narrow-leaved hawk’s beard.

**ACTIVE INGREDIENTS:**
Bromoxynil and florasulam

**CHEMISTRY GROUPS:**
Group 6 (bromoxynil) and Group 2 (florasulam)

**APPLICATION RATES AND PACKAGING:**
- 50 ac/case
- 2 x 9.7 L jugs of bromoxynil + 1.6 L jug of florasulam

**REGISTERED PRE-SEED CROPS:**
- Barley
- Oats
- Wheat

**WEEDS CONTROLLED WHEN TANK-MIXED WITH GLYPHOSATE:**
Up to the 4-leaf stage, please refer to product labels for more detailed information.

- American nightshade
- Bluebur
- Chickweed
- Cleavers
- Cockelbur
- Common groundsel
- Common ragweed
- Cow cockle
- Dandelion¹
- Green foxtail
- Hempnettle
- Horsetail
- Kochia (Group 2 and 9 resistant)²
- Lady’s thumb
- Lamb’s quarters
- Narrow-leaved hawk’s beard
- Redroot pigweed
- Russian thistle
- Shepherd’s purse
- Smartweed
- Saw thistle (annual, perennial)
- Stinkweed
- Tansy mustard
- Tartary buckwheat
- Velvetleaf³
- Volunteer canola (including glyphosate-resistant varieties)
- Volunteer cereals
- Wild buckwheat
- Wild mustard

¹Top growth control up to 6 leaf.
²Spray before plants are 2 inches high.
³Spray before plants are 3 inches high.

**HOW IT WORKS:**
The combination of bromoxynil and florasulam with glyphosate creates a powerful resistance management tool for pre-seed burn-off. Bromoxynil provides contact herbicide activity and controls Group 2 and Group 9 (glyphosate) resistant biotypes while florasulam, an ALS inhibitor, adds additional control of weeds like hempnettle and narrow-leaved hawk’s beard.

**WATER VOLUME:**
- Ground: 20 – 40 L/ac
- Do not apply by air.
RAINFASTNESS:
30 minutes

SUPPORTED TANK MIXES:
Glyphosate (DMA, IPA or K-salt formulation)

MIXING INSTRUCTIONS:
1. Fill spray tank ½ full with water.
2. Start spray tank agitation.
3. Add required amount of florasulam.
4. Add required amount of bromoxynil.
5. Add required amount of glyphosate.
6. Fill the tank with sufficient water.

Note: Do not add a surfactant to this tank mixture.

CROP ROTATIONS:
Pre-seed: Barley, oats, wheat (spring, durum, winter)

PRE-HARVEST INTERVAL:
Do not harvest the treated crop within 60 days after application.

GRAZING RESTRICTIONS:
Livestock may be grazed on treated crop 30 days following application.

STORAGE:
Do not store at temperatures below freezing.

QUICK TIPS:
Remember not to mix different glyphosate salts (DMA, IP or K+) together. Always put the florasulam in the tank first. Do not apply if there is heavy dust on the leaves. Shallow seeding may increase chance of injury.
LADDER ALL IN™

Specially formulated to contain 80 g/L of clodinafop-propargyl and comes in a pack of 2 identical jugs with a surfactant worked into the formulation, so you can spend less time mixing and more time on the field.

ACTIVE INGREDIENT:
Clodinafop-propargyl

CHEMISTRY GROUP:
Group 1

APPLICATION RATES AND PACKAGING:
- 283 – 324 ml/ac
- 2 x 5.66 L jugs
- 90.6 L drum

REGISTERED CROPS:
Wheat (spring, durum)

WEEDS CONTROLLED:

<table>
<thead>
<tr>
<th>Weed</th>
<th>Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barnyard grass</td>
<td>1–5 leaf stage on main stem</td>
</tr>
<tr>
<td>Foxtail (green, yellow)</td>
<td>1–5 leaf stage on main stem</td>
</tr>
<tr>
<td>Persian darnel</td>
<td>1–5 leaf stage on main stem</td>
</tr>
<tr>
<td>Voluntary canary seed</td>
<td>1–6 leaf stage on main stem</td>
</tr>
<tr>
<td>Volunteer oats (tame)</td>
<td>3–6 leaf stage on main stem</td>
</tr>
<tr>
<td>Wild oats</td>
<td>1–6 leaf stage on main stem</td>
</tr>
</tbody>
</table>

HOW IT WORKS:
LADDER ALL IN™ is absorbed by the leaves and is rapidly translocated to the growing points of leaves and stems. Yellowing in 1–3 weeks. Complete control in 3–5 weeks after application.

CROP STAGING:
Prior to emergence of 4th tiller.

WATER VOLUME:
- 20 – 40 L/ac when applied alone.
- Minimum 40 L/ac when tank mixed with broadleaf herbicides.

RAINFASTNESS:
30 minutes
SUPPORTED TANK MIXES:

Herbicides:
- 2,4-D amine
- Ally® 2
- Approve®
- Attain™
- Benchmark®
- Bromoxynil (BROMOTRIL® II)
- Bromoxynil + 2,4-D ester
- Bromoxynil + MCPA ester (BADGE® II)
- Curtail® M
- Dicamba
- Dichlorprop-D
- Dycleer® + Starane™ Herbicide
- Dyvel®
- Estaprop® Plus
- ESTEEM™
- Florasulam 50 SC
- Florasulam + Bromoxynil
- Fluroxypyr + 2,4-D ester (RUSH® 24)
- FORCENIGHT® M
- Infinity®
- Koril® 235
- Lontrel™ 360
- MCPA amine
- MCPA ester
- MCPA sodium salt 300
- Mecoprop-P
- Mextrol® 450
- OUTSHINE®
- Prestige™
- Pulsar®
- Refine® SG
- RUSH® 24
- Target®
- Trophy®
- Turboprop® 600

Insecticides:
- Decis®
- Lambda-cyhalothrin (SILENCER® 120 EC)

Fungicides:
- Propiconazole (BUMPER® 432 EC)

MIXING INSTRUCTIONS:
1. Clean spray tank and ½ fill with clean water. Start agitation or bypass system.
2. If a broadleaf herbicide, insecticide or fungicide is to be used, add the product FIRST prior to adding LADDER ALL IN™ and agitate for 2 – 3 minutes.
3. Add correct amount of LADDER ALL IN™. Agitate for 3 – 5 minutes before adding remainder of water and then maintain constant agitation.
4. After any break in spraying operations, agitate thoroughly before spraying again.
5. Use the spray suspension as soon as it is prepared.
6. If an oil film starts to build up in the tank, drain tank and then clean with a detergent.

PRE-HARVEST INTERVAL:
60 days

GRAZING RESTRICTIONS:
Observe a minimum of 3 days before grazing livestock on treated crops.

STORAGE:
Store away from food, feed and fertilizer.

QUICK TIPS:
Avoid application when heavy rain is forecasted. Use higher application rate when targeting Persian darnel or in cases of heavy grassy weed infestation. LADDER ALL IN™ contains an internal adjuvant; do not add an external surfactant.

Always read and follow pesticide label directions.
OUTSHINE®

This selective post-emergent herbicide gives you control of hard-to-kill annual broadleaf weeds in spring wheat, durum wheat and spring barley.

ACTIVE INGREDIENTS:
Florasulam, fluroxypyr and MCPA ester

CHEMISTRY GROUPS:
Group 2 (florasulam) and Group 4 (fluroxypyr and MCPA ester)

APPLICATION RATES AND PACKAGING:
- 40 ac/case
- 2 x 8 L and 1 x 9.33 L MCPA 2 ester

REGISTERED CROPS:
- Barley
- Wheat (spring, durum)

WEEDS CONTROLLED:
- Burdock
- Cleavers (including ALS-resistant biotypes)
- Cocklebur
- Common chickweed
- Flixweed
- Hempnettles (including ALS-resistant biotypes)
- Kochia (including ALS-resistant biotypes)
- Lamb’s quarters
- Plantain
- Prickly lettuce
- Ragweed
- Redroot pigweed
- Russian pigweed
- Shepherd’s purse
- Smartweed
- Stinkweed
- Stork’s bill
- Sunflower (annual)
- Vetch
- Volunteer canola (all varieties)
- Volunteer flax
- Wild buckwheat
- Wild mustard
- Wild radish

HOW IT WORKS:
OUTSHINE®, applied early and thoroughly to the main flush of actively growing broadleaf weeds, quickly causes plants to stop growing, even if typical symptoms of dying weeds are not noticeable for 1 – 2 weeks after application.

CROP STAGING:
2-leaf expanded to 6-leaf stage.

WATER VOLUME:
Ground: minimum 40 L/ac

RAINFASTNESS:
2 hours
SUPPORTED TANK MIXES:

Barley:
- Assert®
- Axial®

Wheat (spring, durum):
- Assert®
- Axial®
- BRAZEN™ II
- Everest®
- LADDER ALL IN™
- Simplicity™
- Traxos®

MIXING INSTRUCTIONS:
1. Fill spray tank ½ full with water and begin agitation.
2. Add the required amount of OUTSHINE®.
3. Add the required amount of MCPA 2 ester.
4. Continue filling the tank with sufficient water to spray 40 L/ac of mixture.
5. Use caution near susceptible crops or desirable plants.
6. Product has the potential to leach; avoid excessive irrigation.

CROP ROTATIONS:
- Can be seeded the following year to barley, canola, oats, peas, wheat, or fields to be summerfallowed.
- Do not use in successive years at the same site.

PRE-HARVEST INTERVAL:
Do not harvest treated crop within 60 days of application.

GRAZING RESTRICTIONS:
Do not graze livestock within 7 days of application.

STORAGE:
- Store in original containers in secure, dry, heated storage.
- If product is frozen, bring to room temperature and agitate before use.

QUICK TIPS:
2 unique modes of action and 3 active ingredients provide resistance management and high performance.
PHANTOM® 240 SL

Get early post-emergent broadleaf weed control in field peas, dry beans, alfalfa and soybean crops with residual control to eliminate early season weed competition.

ACTIVE INGREDIENT:
Imazethapyr

CHEMISTRY GROUP:
Group 2

APPLICATION RATES AND PACKAGING:
- 85 ml/ac or 80 ac/case
- 2 x 3.3 L jugs/case

REGISTERED CROPS:
- Alfalfa, established (for seed)
- Alfalfa, seedling (forage, seed)
- Chickling vetch (for seed)
- Dry beans (pinto, pink, red)
- Field peas
- Grassy peas
- Soybeans (Manitoba only)

WEEDS CONTROLLED:
Check label as weeds controlled vary by crop.

Broadleaf weeds up to and including 4-leaf stage:
- Chickweed
- Cleavers
- Hempnettle
- Redroot pigweed
- Shepherd’s purse
- Smartweed
- Stinkweed
- Volunteer canola (non-Clearfield®)
- Wild buckwheat¹
- Wild mustard

Grassy weeds:
- Green foxtail
- Wild oats²

¹ Suppression only.
² Apply between the 2- and 4-leaf stage.

HOW IT WORKS:
PHANTOM® 240 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 death 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.

WATER VOLUME:
- Ground: 40 – 160 L/ac
- Do not apply by air.

RAINFASTNESS:
6 hours or reduced control may occur on foliar application.
CROP STAGING:
For best results, spray when weeds are in the seedling stage.

<table>
<thead>
<tr>
<th>Crop</th>
<th>Crop Stage</th>
<th>Soil Zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alfalfa, established (seed production only)</td>
<td>Apply before alfalfa reaches 12 inches.</td>
<td>N/A</td>
</tr>
<tr>
<td>Alfalfa, seedling (forage or seed)</td>
<td>After the 1st trifoliate leaf.</td>
<td>Black, grey wooded and irrigated brown soils.</td>
</tr>
<tr>
<td>Chickling vetch (for seed), Grassy peas</td>
<td>5 – 7 leaf</td>
<td>N/A</td>
</tr>
<tr>
<td>Dry beans (pinto, pink, red)</td>
<td>Up to and including the 2nd trifoliate leaf.</td>
<td>Black, grey wooded and irrigated brown soils.</td>
</tr>
<tr>
<td>Field peas</td>
<td>Up to the 6th trifoliate leaf.</td>
<td>Black and grey wooded soils.</td>
</tr>
<tr>
<td>Soybeans (Manitoba only)</td>
<td>1 – 3 leaf</td>
<td>N/A</td>
</tr>
</tbody>
</table>

1Do not use in the last year of seed production.

SUPPORTED TANK MIXES:
- ARROW® 240 EC
- ARROW ALL IN™
- Basagran® Forté
- Broadloom® (bentazon)
- DAVAI™ 80 SL
- Glyphosate
- Gramoxone
- Linuron
- SQUADRON®

INSTRUCTIONS:
1. Fill the spray tank 1/2 – 3/4 full with water.
2. Add the required amount of PHANTOM® 240 SL while agitating the spray solution.
3. While agitating, add non-ionic surfactant containing at least 80% active ingredient (e.g. Agral® 90, Ag-Surf®) at the rate of 0.25% (2.5 L of surfactant per 1,000 L of spray solution).
4. Fill the remainder of the tank with water.

CROP ROTATIONS:
Research studies have shown the following crops can be safely grown in black and grey wooded soil zones the year following application:
- Alfalfa
- Clearfield® canola (imazethapyr and imazamox tolerant)
- Field peas
- Lentils
- Spring barley
- Spring wheat

GRAZING RESTRICTIONS:
- Do not graze or harvest seedling alfalfa within 14 days of treatment.
- Do not graze or harvest field peas for feed within 30 days of treatment.
- Do not graze other treated crops or cut for feed prior to crop maturity.

PRE-HARVEST INTERVALS:
- Dry beans: 75 days
- Field peas, Chickling vetch, Grassy peas: 60 days
- Soybeans: 85 days

STORAGE:
Do not store below freezing.

QUICK TIPS:
Consult your local provincial guidelines or other herbicide labels for potential tank-mix partners.

Always read and follow pesticide label directions.
This is the ideal glyphosate tank-mix partner to keep fields free of weeds in chemfallow and post-harvest applications. It controls a wide range of annual broadleaf and grassy weeds.

ACTIVE INGREDIENT:
Florasulam

CHEMISTRY GROUP:
Group 2

APPLICATION RATES AND PACKAGING:
· PRIORITY® at 0.04 L/ac or 320 ac/case + glyphosate at 0.5 L/ac at 360 g a.i.
· 2 x 6.4 L jugs/case

APPLICATION TIMING:
· Chemfallow: Apply when weeds are actively growing in 1–4 leaf stage.
· Post-harvest: Apply from late September to freeze-up.
· Low-disturbance seeding system: Apply just prior to seeding.
· Other seeding systems: Apply 1 week prior to seeding.

WEEDS CONTROLLED BY PRIORITY + GLYPHOSATE 1:
Controlled (2–4 leaf stage):
· Canada fleabane 2
· Cleavers
· Common chickweed
· Common ragweed 2
· Cow cockle
· Dandelion 3
· Downey brome
· Flixweed
· Giant foxtail
· Green foxtail
· Hempnettle
· Lady’s thumb
· Lamb’s quarters
· Narrow-leaved hawk’s beard 2
· Persian darnel
· Redroot pigweed
· Russian thistle
· Shepherd’s purse
· Smartweed
· Stinkweed
· Volunteer barley
· Volunteer canola 4
· Volunteer flax
· Volunteer wheat 5
· Wild buckwheat 5
· Wild mustard
· Wild oats

WEEDS SUPPRESSED BY PRIORITY® + GLYPHOSATE 1:
· Kochia
· Annual sow thistle
· Perennial sow thistle 6

180 g of active ingredient per acre.
2 Less than 3 inches in height.
3 Mature plants up to 12 inches in diameter, rosettes and seedlings.
4 Including all herbicide-tolerant canola varieties.
5 Up to 5 leaves.
6 Applications made at advanced stages will be less effective.

HOW IT WORKS:
PRIORITY® 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.
WATER VOLUME:
- Ground: 20 – 40 L/ac
- Do not apply by air.

RAINFASTNESS:
30 minutes

SUPPORTED TANK MIXES:
- Tank mix PRIORITY® herbicide at a rate of 0.04 L/ac with 180 g a.i./ac of glyphosate DMA, IPA or K salt formulation (0.5 L at 360 g equivalent).
- For improved control of larger annual weeds and control of established perennial weeds, PRIORITY® may be tank mixed with a higher rate of glyphosate.
- ADAMA supports the use of any glyphosate salt (DMA, IPA or K+).
- BROMOTRIL® II

MIXING INSTRUCTIONS:
1. Fill spray tank ½ full with water.
2. Start spray tank agitation.
3. Add the required amount of PRIORITY®.
4. Add tank-mix partner and continue to agitate.
5. Fill the tank with sufficient water to spray 40 L/ac of mixture.

Note: Do not add a surfactant to this tank mixture.

CROP ROTATIONS:
- Chemfallow: When applied prior to August 1, barley, canola, oats, field peas and wheat (spring, durum, winter) can be seeded the following year.
- Chemfallow after August 1 and post-harvest: Barley, oats and wheat (spring, durum, winter) can be seeded the following year.

PRE-HARVEST INTERVAL:
Do not harvest the treated crop within 60 days of application.

GRAZING RESTRICTIONS:
Livestock may be grazed on treated crops 7 days following application.

STORAGE:
- Store in original containers in secure, dry, heated storage.
- PRIORITY® will freeze at -10 C. If product is frozen, bring to room temperature and agitate before use.

QUICK TIPS:
PRIORY® can be mixed with the glyphosate of your choice. Remember not to mix different glyphosate salts (DMA, IPA or K+) together.

GROWING CONDITIONS:
Marginal soil fertility, saline soils, extended periods of waterlogged-soil conditions, drought or seedling diseases can delay seedling development and emergence resulting in reduced crop stands. Fields with these conditions may show initial crop discoloration and be at greater risk of herbicide injury. In most cases crops will outgrow the symptoms but in severe situations especially where herbicide may have leached into the root zone may result in a reduced crop stand, yield, quality or delayed maturity may occur.

Always read and follow pesticide label directions.
**WATER VOLUME:**
- Ground: 20 – 40 L/ac
- Do not apply by air.

**RAINFASTNESS:**
Do not apply if rainfall is forecasted for the time of application.

**SUPPORTED TANK MIXES:**
- Tank mix PRIORITY® herbicide at a rate of 0.04 L/ac with 180 g a.i./ac of glyphosate DMA, IPA or K salt formulation (0.5 L at 360 g equivalent).
- For improved control of larger annual weeds and control of established perennial weeds, PRIORITY® may be tank mixed with a higher rate of glyphosate.

**MIXING INSTRUCTIONS:**
1. Fill spray tank ½ full with water.
2. Start spray tank agitation.
3. Add the required amount of PRIORITY®.
4. Add tank-mix partner and continue to agitate.
5. Fill the tank with sufficient water to spray 40 L/ac of mixture.

**Note:** Do not add a surfactant to this tank mixture.

**CROP ROTATIONS:**
Pre-seed: Barley, oats and wheat (spring, durum, winter).

**PRE-HARVEST INTERVAL:**
Do not harvest the treated crop within 60 days of application.

**GRAZING RESTRICTIONS:**
Livestock may be grazed on treated crops 7 days following application.

**STORAGE:**
- Store in original containers in secure, dry, heated storage.
- PRIORITY® will freeze at -10 C. If product is frozen, bring to room temperature and agitate before use.

**QUICK TIPS:**
Do not apply if there is heavy dust on the leaves. Do not apply prior to heavy rainfall as leaching to root zone may occur. Shallow seeding increases chance of injury.

**GROWING CONDITIONS:**
Marginal soil fertility, saline soils, extended periods of waterlogged-soil conditions, drought or seedling diseases can delay seedling development and emergence resulting in reduced crop stands. Fields with these conditions may show initial crop discoloration and be at greater risk of herbicide injury. In most cases crops will outgrow the symptoms but in severe situations especially where herbicide may have leached into the root zone may result in a reduced crop stand, yield, quality or delayed maturity may occur.
Quasar™

Proven one-pass weed control, with multiple-flush control of shallow germinating weeds like green foxtail and wild mustard in field peas, dry beans and soybeans.

Active Ingredients:
Imazamox and imazethapyr

Chemistry Group:
Group 2

Application Rates and Packaging:
- 1 co-pack treats 80 acres
- 1 x 6.47 L imazamox (Davai™ 80 SL)
- 1 x 2.08 L imazethapyr (Phantom® 240 SL)
- Merge or methylated seed oils like Norac MSO or Hasten® NT at 0.5% v/v, or a non-ionic surfactant like Adamas 80 at 0.25% v/v

Registered Crops:
- Field peas
- Soybeans
- Dry beans

Weeds Controlled:
Grass weeds (1 – 4 true leaf stage or early tillering):
- Green foxtail
- Tame oats
- Wild oats
- Yellow foxtail
- Tame oats
- Tame oats

Broadleaf weeds (cotyledon to 4-leaf stage):
- Chickweed
- Green smartweed
- Lamb’s quarters
- Redroot pigweed
- Stinkweed
- Wild mustard
- Volunteer canola (non-Clearfield®)
- Wild buckwheat

Weeds Suppressed:
- Barnyard grass
- Volunteer barley

1 The QUASAR™ tank mix will not control weed biotypes that are resistant to Group 2 biotypes.

How It Works:
The 2 active ingredients in QUASAR™ are readily absorbed through both leaf and root uptake, and are 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 death become evident. Leaves and stems become yellow and purple, and root growth may be inhibited.

Crop Staging:
- Soybeans: 1 – 3 leaf
- Field peas: 1 – 6 true leaves
- Soybeans: 1 – 3 leaf
- Dry Beans: 1 – 2 leaf

Water Volume:
Ground: 40 L/ac or 10 gal/ac
Rainfastness: 3 hours

Registered and Supported Tank Mixes:
- Glyphosate
- Python™ B (bentazon)
- Arrow® 240 EC
- Arrow All In™ or Quizalofop

Always read and follow pesticide label directions.
MIXING INSTRUCTIONS:
1. For ground application use 40 L/ac.
2. Use a 50-mesh (or coarser) filter screen.
3. Fill the spray tank ¾ full with water.
4. Add the required amount of DAVA™ 80 SL into the sprayer.
5. Add the required amount of PHANTOM® 240 SL into the sprayer.
6. Agitate until thoroughly mixed.
7. Continue agitation and add the required amount of the tank-mix partner.
8. Continue agitation and add the required amount of recommended adjuvant.
9. Complete filling the tank to the desired level with water.

CROP ROTATIONS:
There is the possibility of residual soil activity from DAVA™ 80 SL and PHANTOM® 240 SL the year following application. Research studies have shown that the following crops may be safely grown in black and grey wooded soil zones the year following DAVA™ 80 SL and PHANTOM® 240 SL applications:

- Spring barley
- Spring wheat
- Lentils
- Field peas
- Clearfield® canola

Conduct a field bioassay (a test strip grown to maturity) the year BEFORE growing any other crop than those listed above.

PRE-HARVEST INTERVALS:
- Field peas: 60 days
- Soybeans: 85 days
- Dry beans: 75 days

GRAZING RESTRICTIONS:
Do not graze treated crop. Field peas may be fed to livestock 30 days after application.

STORAGE:
- Store above 5 C 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 from freezing. DO NOT store below 0 C. If the product is exposed to temperatures below 0 C during shipment or storage, make sure the product has thawed completely, and shake the container vigorously.

QUICK TIPS:

Cool weather conditions or drought will delay herbicidal activity and if prolonged, may result in poor weed control. Use of QUASAR™ co-pack 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.
Multiple modes of action control a wide spectrum of broadleaf weeds like kochia, cleavers and wild buckwheat (including Group 2 resistant biotypes) in spring wheat, durum wheat and barley, with excellent grassy weed tank mixability.

ACTIVE INGREDIENTS: Fluroxypyr and 2,4-D ester

CHEMISTRY GROUP: Group 4

APPLICATION RATES AND PACKAGING:
- 240 ml/ac fluroxypyr + 260 ml/ac 2,4-D Ester 700 or 40 ac/case

REGISTERED CROPS:
- Barley
- Wheat (spring, durum)

WEEDS CONTROLLED:
2 – 4 leaf stage unless otherwise noted:
- Bluebur
- Burdock
- Cleavers
- Cocklebur
- Field horsetail
- Flixweed
- Goat’s beard
- Hoary cress
- Kochia
- Lamb’s quarters
- Prickly lettuce
- Ragweed
- Shepherd’s purse
- Stinkweed
- Sunflower (annual)
- Sweet clover
- Vetch
- Volunteer canola
- Volunteer flax
- Wild buckwheat
- Wild mustard
- Wild radish

For even tougher broadleaf weed control, add an additional 81 ml/ac 2,4-D ester:
- Blue lettuce
- Dandelion
- Docks
- Dog mustard
- Field bindweed
- Field peppergrass
- Gumweed
- Russian thistle
- Stork’s bill (1 – 8 leaf)
- Hairy galinsoga
- Hedge bindweed
- Lady’s thumb
- Leafy spurge
- Narrow-leaved hawk’s beard (1 – 2 leaf)
- Oak-leaved goosefoot
- Redroot pigweed
- Round-leaved mallow
- Tansy
- Tartary buckwheat
- Wild buckwheat (1 – 8 leaf)

WEEDS SUPPRESSED:
- Annual sow thistle
- Canada thistle
- Common chickweed (up to 3 inches)
- Hempnettle (2 – 6 leaf)
- Perennial sow thistle

1 Top growth control only.
2 Including biotypes resistant to Group 2 herbicides that inhibit the ALS enzyme.
3 Including all herbicide-resistant canola varieties.
4 Spring rosettes.

Always read and follow pesticide label directions.
HOW IT WORKS:
Group 4 herbicides disrupt normal plant growth regulation, resulting in twisting and cupping of leaves and death of susceptible plants in 2–10 days.

CROP STAGING:
- 4 leaf up to the emergence of the flag leaf.
- Application before the 4-leaf stage of wheat and barley may lead to yield loss.

WATER VOLUME: Ground: 40 L/ac

RAINFASTNESS: 2 hours

SUPPORTED TANK MIXES:
Wheat only:
- Clodinafop (LADDER ALL IN™)
- Everest®
- Fenoxaprop
- Simplicity™

Wheat and barley:
- Assert®
- Tralkoxydim (BISON® 400 L)

1 Additional 2,4-D ester is not recommended when mixing RUSH® 24 and Simplicity™.

MIXING INSTRUCTIONS:
1. Fill the spray tank ½ full with water. With agitation running, add the required volume of fluroxypyr, followed by the required volume of 2,4-D ester.
2. Fill tank with remaining water.
3. If tank mixing with a grassy weed herbicide, read both labels and follow the more stringent directions for tank mixing.

CROP ROTATIONS:
The following crops may be grown 1 year after application:
- Barley
- Canola
- Flax
- Forage grass
- Lentils
- Mustard
- Oats
- Field peas
- Rye
- Wheat

PRE-HARVEST INTERVAL:
60 days

GRAZING RESTRICTIONS:
- Do not feed or cut forage grasses for hay.
- Do not permit lactating dairy animals to graze cereal fields within 7 days of application. Do not harvest cereal crops for forage or cut hay within 30 days of application.
- Withdraw meat animals from treated fields at least 3 days before slaughter.

STORAGE:
Avoid freezing.

QUICK TIPS:
Get optimal weed control by applying between temperatures of 12–24 C. Reduced activity will occur when temperatures are below 8 C or above 27 C. Frost 3 days before or after application may reduce weed control and crop tolerance. Weed control may be reduced during stress conditions.
This broad-spectrum herbicide is registered for grassy and broadleaf weed control in a wide range of crops, most notably lentils, field peas, chickpeas, faba beans, soybeans and potatoes. It can work alone or in combination with recommended tank mixes.

ACTIVE INGREDIENT:
Metribuzin

CHEMISTRY GROUP:
Group 5

APPLICATION RATES AND PACKAGING:
- Please refer to the label for application rates as these vary based on crop, soil type and application methods.

REGISTERED CROPS:
- Asparagus (established)
- Chickpeas
- Dryland winter wheat
- Faba beans
- Field peas
- Highbush blueberries (newly seeded)
- Lentils
- Potatoes (including sprinkler irrigation)
- Processing peas
- Shelterbelts
- Soybeans
- Spring barley
- Spring wheat

WEEDS CONTROLLED:
- Annual bluegrass
- Ball mustard
- Barnyard grass
- Bromegrass
- Common chickweed
- Common groundsel
- Corn spurry
- Cow cockle
- Downy brome
- Flixweed
- Green foxtail
- Green smartweed
- Goose grass
- Hempnettle
- Kochio
- Lady’s thumb
- Lamb’s quarters
- Night-flowering catchfly
- Persian darnel
- Redroot pigweed
- Russian thistle
- Shepherd’s purse
- Stinkweed
- Tartary buckwheat
- Volunteer non-triazine-tolerant canola
- Wild buckwheat
- Wild mustard
- Wild oats
- Wormseed mustard
- Yellow foxtail

1 Pre-seed incorporated with Treflan™ EC or Rival® herbicide.
2 Control at 110 g/ac post-emergence.
3 Suppression only in chickpeas and lentils as post-emergence application.
4 Control at 80 g/ac post-emergence.
5 Control at 225 – 300 g/ac post-emergence.
6 Suppression at 80 g/ac post-emergence.
7 Control at 150 g/ac post-emergence.

Always read and follow pesticide label directions.
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:

<table>
<thead>
<tr>
<th>Coarse</th>
<th>Medium</th>
<th>Fine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loamy sand,</td>
<td>Loam, Silt loam, Silt, Sandy clay loam,</td>
<td>Silty clay loam, Silty clay, Clay</td>
</tr>
<tr>
<td>Sandy loam</td>
<td>Sandy clay loam</td>
<td></td>
</tr>
</tbody>
</table>

- 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.

SUPPORTED TANK MIXES:
Spring wheat and spring barley (post-emergent):
- MCPA amine
- 2,4-D amine
- Banvel® II
- Dicamba
- Target® Liquid

Field peas (post-emergent):
- MCPA sodium salt
- PHANTOM® 240 SL
- Venture® L

Lentils, soybeans, faba beans and field peas (pre-seed incorporated):
- Treflan™ EC
- Broadstrike Dual®
- Dual II Magnum®
- Frontier®
- Linuron
- Trifluralin

Potatoes (pre-seed incorporated and pre-emergence through irrigation system):
- Eptam® 8-E
- Bravo® 500
- Glyphosate
- Gramoxone

RAINFASTNESS:
6 hours after foliar application
### APPLICATION TIMING AND CROP STAGING:

<table>
<thead>
<tr>
<th>Crop</th>
<th>Crop Stage</th>
<th>Application Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barley</td>
<td>2 – 5 leaf</td>
<td>Post-emergence</td>
</tr>
<tr>
<td>Wheat</td>
<td>2 – 5 leaf</td>
<td>Post-emergence</td>
</tr>
<tr>
<td>Field peas</td>
<td>Pea vines must be less than 6 inches long at time of post-emergent application.</td>
<td>Post-emergence or pre-seed incorporated (spring and fall)</td>
</tr>
<tr>
<td>Chickpeas</td>
<td>1 – 3 above ground nodes</td>
<td>Post-emergence</td>
</tr>
<tr>
<td>Lentils</td>
<td>Vines must be less than 6 inches long or in 3 – 5 node stage.</td>
<td>Post-emergence or pre-seed incorporation (fall)</td>
</tr>
<tr>
<td>Soybeans</td>
<td>Before seeding</td>
<td>Pre-seed incorporation (spring)</td>
</tr>
<tr>
<td>Fababeans</td>
<td>Before seeding</td>
<td>Pre-seed incorporated (spring and fall)</td>
</tr>
<tr>
<td>Potatoes</td>
<td>First use on a potato variety should be limited to a small test area to ensure varietal tolerance.</td>
<td>Post-emergence or pre-seed incorporated. Refer to the label for sprinkler irrigation application.</td>
</tr>
</tbody>
</table>

### CROP ROTATIONS:
Rotational crops such as onions, celery, peppers, cole crops, lettuce and spinach, sugar beets, table beets and turnips, pumpkins and squash, cucumbers and melons, tobacco and non-triazine-tolerant canola (rapeseed) are sensitive to SQUADRON® and may be injured if seeded in soil treated with SQUADRON® during the year of application or the following crop year.

Fall seeded or cover crops such as wheat, oats and rye may be injured when seeded within the same season as the application of SQUADRON®.

### GRAZING:
- Do not graze treated wheat or barley for 30 days after application.
- Do not graze peas, chickpeas or lentils for 70 days after application.
HERBICIDE

TOPLINE®

It controls a wide spectrum of broadleaf weeds with excellent wild buckwheat, cleavers and chickweed control. It also gives you multiple modes of action in wheat, barley and oat crops.

ACTIVE INGREDIENTS:
Florasulam and MCPA ester

CHEMISTRY GROUPS:
Group 2 (florasulam) and Group 4 (MCPA ester)

APPLICATION RATES AND PACKAGING:
- 40 ml/ac florasulam + 230 ml/ac MCPA ester, or 40 ac/case
- 1 x 1.6 L florasulam jug + 1 x 9.33 L MCPA ester jug/case

REGISTERED CROPS:
- Barley
- Oats
- Wheat (spring, durum)

WEEDS CONTROLLED:
1–4 leaf stage:
- Ball mustard
- Burdock
- Common chickweed
- Cleavers
- Cow cockle
- Flixweed
- Hempnettle¹
- Lamb’s quarters
- Redroot pigweed
- Russian pigweed
- Prickly lettuce
- Ragweed
- Shepherd’s purse
- Smartweed
- Stinkweed
- Sunflower (annual)
- Volunteer canola²
- Wild buckwheat
- Wild mustard

Suppressed:
- Annual sow thistle
- Canada thistle¹
- Dandelion¹ ³
- Plantain⁴
- Perennial sow thistle
- Stork’s bill¹

¹ For heavy infestations, add 47 ml/ac of MCPA ester for improved control.
² Including all herbicide-resistant varieties.
³ Seedlings and overwintered rosettes less than 6 inches.
⁴ Top growth control only.

HOW IT WORKS:
The Group 2 herbicide inhibits the production of the ALS enzyme in plants. This enzyme is essential for the production of certain amino acids required for plant growth. The Group 4 herbicide disrupts normal plant growth regulation, resulting in death of susceptible plants.

CROP STAGING:
Expanded 2-leaf up to the 6-leaf stage.

WATER VOLUME:
Ground: 40 L/ac
RAINFASTNESS:
2 hours

SUPPORTED TANK MIXES:
Wheat and barley:
- Assert®
- Axial®
- BRAZEN™ II

Wheat only:
- Everest®
- Simplicity™
- Clodinafop (LADDER ALL IN™)

MIXING INSTRUCTIONS:
1. After filling the spray tank ½ full with water, and with agitation running, add the required amount of florasulam, followed by the required amount of MCPA ester.
2. Fill tank with remaining water.

Note: Do not add a surfactant to this mixture.

CROP ROTATIONS:
Wheat, barley, oats, canola and field peas may be grown the year following an application.

PRE-HARVEST INTERVAL:
60 days

GRAZING RESTRICTIONS:
- Do not cut for feed or hay or allow lactating dairy animals to graze treated crops or within 7 days of application.
- Withdraw meat animals from treated feed 3 days prior to marketing.

STORAGE:
- Store in dry, heated area.
- If frozen, bring to room temperature and agitate before use.

QUICK TIPS:

TOPLINE® is well suited to dark brown, black and grey soil zones where cleavers, hempnettle, wild buckwheat and volunteer canola are main concerns.
INSECTICIDE

- CORMORAN™ ................................................. 53
- PYRINEX® 480 EC ............................................. 59
- SILENCER® 120 EC .......................................... 61
- SOMBRERO® 600 FS ......................................... 63
CORMORAN™

A new option with multiple modes of action for Colorado potato beetle control in potatoes as well as a wide range of other insects in specialty crops.

ACTIVE INGREDIENTS:
Novaluron (100 g/L) and acetamiprid (80 g/L) EC

CHEMISTRY GROUPS:
Group 4 and Group 15

APPLICATION RATES AND PACKAGING:
- 2 x 10 L
- Varies by crop and pest, see label for details.

REGISTERED CROPS:
- Alfalfa (grown for seed)
- 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
- 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
- Importe cabbageworm
- Japanese beetle
- Leafhopper
- Leafroller
- Lesser appleworm
- Lygus bug
- Mullein plant bug
- Oriental fruit moth
- Plum curculio
- 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 2 modes of action, CORMORAN™ provides both rapid knockdown and residual control of insect pests.
# CROP STAGING AND RATES:

<table>
<thead>
<tr>
<th>Crop</th>
<th>Insects Controlled</th>
<th>Rate</th>
<th>Application Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Apples</strong></td>
<td>Leafhopper, Tentiform leafminer</td>
<td>0.28 L/ac</td>
<td>Apply in minimum finished spray volume of 400 L/ac by ground. Repeat applications if needed to maintain control but do not make applications &lt; 12 days apart. Do not apply more than 2.8 L/ac per season.</td>
</tr>
<tr>
<td>Aphids</td>
<td></td>
<td>0.28 – 0.42 L/ac</td>
<td></td>
</tr>
<tr>
<td>Gypsy moth, Japanese beetle, Mullein bug</td>
<td></td>
<td>0.34 – 0.5 L/ac</td>
<td></td>
</tr>
<tr>
<td>Green fruitworm</td>
<td></td>
<td>0.42 L/ac</td>
<td></td>
</tr>
<tr>
<td>Apple maggot, Codling moth, European apple sawfly, Oriental fruit moth, Plum curculio</td>
<td></td>
<td>0.42 – 0.5 L/ac</td>
<td></td>
</tr>
<tr>
<td>Lesser appleworm, Tarnished plant bug</td>
<td></td>
<td>0.5 L/ac</td>
<td></td>
</tr>
<tr>
<td>Dogwood borer</td>
<td></td>
<td>0.6 L/ac</td>
<td></td>
</tr>
<tr>
<td><strong>Potatoes</strong></td>
<td>Colorado potato beetle</td>
<td>0.18 – 0.28 L/ac</td>
<td>For Colorado potato beetle, do not apply more than twice to a single generation and do not apply to successive generations. Apply in minimum finished spray volume of 80 L/ac by ground. Do not apply more than once every 10 – 14 days.</td>
</tr>
<tr>
<td>Armyworm, Cabbage looper</td>
<td></td>
<td>0.18 – 0.3 L/ac</td>
<td></td>
</tr>
<tr>
<td>Leafhopper</td>
<td></td>
<td>0.2 – 0.3 L/ac</td>
<td></td>
</tr>
<tr>
<td>Aphids, European corn borer</td>
<td></td>
<td>0.26 – 0.3 L/ac</td>
<td></td>
</tr>
<tr>
<td><strong>Stone fruit</strong></td>
<td>Oriental fruit moth (Ontario only)</td>
<td>0.58 – 0.84 L/ac</td>
<td>Maximum 4 applications per season. 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.</td>
</tr>
<tr>
<td>Cherry fruit fly (suppression, cherry only), Plum curculio (under high pressure, suppression only)</td>
<td></td>
<td>0.84 L/ac</td>
<td></td>
</tr>
</tbody>
</table>

Always read and follow pesticide label directions.
## Crop Insecticide Control

### Peppers (bell and non-bell)
- **Insects Controlled**: Colorado potato beetle (CPB)
- **Rate**: 0.18 – 0.28 L/ac
- **Application Instructions**: Do not apply more than 1.05 L/ac per season. 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. Do not make applications less than 7 days apart.

- **Insects Controlled**: Aphids
- **Rate**: 0.2 L/ac

- **Insects Controlled**: European corn borer
- **Rate**: 0.26 – 0.3 L/ac

- **Insects Controlled**: Armyworm, Cabbage looper
- **Rate**: 0.18 – 0.3 L/ac

### Strawberries
- **Insects Controlled**: Aphids, Leafhopper
- **Rate**: 0.2 – 0.3 L/ac

- **Insects Controlled**: Strawberry clipper weevil, Tarnished plant bug
- **Rate**: 0.36 L/ac

- **Application Instructions**: Apply in a minimum application volume of 80 L/ac by ground. Do not apply more than once every 10 – 14 days or 3 times per season. Do not apply during bloom.

### Brassica (cole) leafy vegetables (crop group 5):
- **Insects Controlled**: Alfalfa looper, Armyworm, Cabbage looper, Diamondback moth, Imported cabbageworm
- **Rate**: 0.18 – 0.3 L/ac

- **Insects Controlled**: Aphids
- **Rate**: 0.26 – 0.3 L/ac

- **Insects Controlled**: Lygus bug, Swede midge
- **Rate**: 0.3 L/ac

- **Application Instructions**: Apply in a minimum finished spray volume of 20 L/ac by air or 81 L/ac by ground. Applications per season: 2 at low rate, 1 at high rate. Do not apply more than 0.68 L/ac per season.
<table>
<thead>
<tr>
<th>Crop</th>
<th>Insects Controlled</th>
<th>Rate</th>
<th>Application Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leafy vegetables – Brassica leafy greens (crop subgroup 4): 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</td>
<td>Aphids</td>
<td>0.26 – 0.3 L/ac</td>
<td>Apply in a minimum finished spray volume of 80 L/ac by ground. Do not apply more than once every 7 – 10 days or more than 3 times per season.</td>
</tr>
<tr>
<td>Sweet corn</td>
<td>Aphids</td>
<td>0.2 – 0.28 L/ac</td>
<td>Applications per season: 2. Apply in a minimum 80 L/ac spray volume by ground, no more than once every 21 days. Use the higher rate for heavy infestations.</td>
</tr>
<tr>
<td>Crop</td>
<td>Insects Controlled</td>
<td>Rate</td>
<td>Application Instructions</td>
</tr>
<tr>
<td>------</td>
<td>--------------------</td>
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<td>--------------------------</td>
</tr>
<tr>
<td>Bushberries (crop 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</td>
<td>Aphids, Blueberry gall midge (cranberry tipworm)</td>
<td>0.3 L/ac</td>
<td>Applications per season: 3. Apply in a finished spray volume of 80 L/ac by ground. Do not apply more than once every 10 – 14 days.</td>
</tr>
<tr>
<td></td>
<td>Japanese beetle</td>
<td>0.28 L/ac</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Blueberry maggot</td>
<td>0.48 – 0.56 L/ac</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Blueberry flea beetle, Blueberry spanworm, Strawberry rootworm, Cherry fruitworm, Cranberry fruitworm, Thrips</td>
<td>0.56 L/ac</td>
<td></td>
</tr>
<tr>
<td>Alfalfa (grown for seed)</td>
<td>Alfalfa plant bug, Lygus bug</td>
<td>0.3 – 0.36 L/ac</td>
<td>Apply prior to bloom up to when 50% of seed pods are ripe. Use higher rate for heavier infestations. Applications per season: 2. Do not apply more than once in 7 days. Do not exceed more than 0.72 L/ac per season.</td>
</tr>
</tbody>
</table>
INSECTICIDE
CORMORAN™

WATER VOLUME:
- 80 – 400 L/ac by ground

RAINFASTNESS:
Avoid application when heavy rain is forecast.

MIXING INSTRUCTIONS:
1. Be sure sprayer is clean and not contaminated with any other materials or crop injury or sprayer clogging may result.
2. Fill tank ½ full with clean water.
3. Start agitation.
4. Be certain that the agitation system is working properly and creates a rippling or rolling action on the liquid surface.
5. Pour product directly from container into partially filled spray tank.
6. Continue filing tank. Increase agitation if necessary to maintain surface action.
7. Maintain continuous 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
There are no rotational crop plant restrictions for this product.

PRE-HARVEST INTERVALS:
- Strawberries: 1 day
- Brassica leafy vegetables (crop group 5 and subgroup 4), Peppers, Potatoes, Stone fruits: 7 days
- Bushberries (crop group 13-07B): 8 days
- Sweet corn: 10 days
- Alfalfa (grown for seed), 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.

Always read and follow pesticide label directions.
INSECTICIDE

PYRINEX® 480 EC
Get flexible, broad-spectrum insect control in cereals, canola and many other field and specialty crops.

ACTIVE INGREDIENT:
Chlorpyrifos

CHEMISTRY GROUP:
Group 1B

APPLICATION RATES AND PACKAGING:
Common field crop rates:
- 234 – 600 ml/ac or 42 – 17 ac/10 L jug; consult the label for specific application rates
- 2 x 10 L jugs/case
- 205 L drum (rates vary)

REGISTERED CROPS:
- Canola
- Cereals (wheat, barley, oats)
- Corn (field, sweet)
- Flax
- Lentils
- Potatoes
- Sunflowers
- Wide variety of fruits, vegetables and specialty crops

PYRINEX® 480 EC is registered on almost 30 crops; refer to the label for more information.

KEY INSECTS CONTROLLED:
- Alfalfa looper
- Army cutworm
- Armyworm
- Bertha armyworm
- Black cutworm
- Brown wheat mite
- Cabbage maggot
- Colorado potato beetle (larvae)
- Darksided cutworm
- Diamondback moth (larvae)
- Filbert aphid
- Grasshoppers
- Lygus bugs
- Mountain pine beetle
- Onion maggot
- Orange wheat blossom midge (wheat only)
- Pale western cutworm
- Potato flea beetle
- Redbacked cutworm
- Russian wheat aphid
- Seed weevil
- Strawberry cutworm (crown borer)
- Tarnished plant bug
- Variegated cutworm

HOW IT WORKS:
An organophosphate insecticide that controls insects through contact, ingestion and vapour inhalation.

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.

WATER VOLUME:
- Ground: 20 – 80 L/ac
- Air: 4 – 12 L/ac
INSECTICIDE

PYRINEX® 480 EC

RAINFASTNESS:
4 – 6 hours

SUPPORTED TANK MIXES:
PYRINEX® 480 EC can be tank mixed with the herbicides listed for wheat, oats and barley. When tank mixing, first add the herbicide to the spray tank and then add PYRINEX® 480 EC.

- 2,4-D amine
- 2,4-D ester
- Avenge®
- Banvel® + 2,4-D amine
- BUMPER® 432 EC
- Dicamba
- Fenoxprop-p-ethyl (Puma®)
- MCPA amine
- MCPA ester
- OVERALL® 240 SC

MIXING INSTRUCTIONS:
1. Fill spray tank with water to 2/3 of final spray volume.
2. If tank mixing, add required amount of herbicide or fungicide.
3. Add required amount of PYRINEX® 480 EC with agitation.
4. Fill tank with water to the final desired volume.
5. Keep agitator running during mixing and application.

CROP ROTATIONS:
No restrictions the following year.

PRE-HARVEST INTERVALS:
- Canola: 21 days
- Cereals (wheat, barley, oats): 60 days
- Corn (field, sweet): 70 days
- Flax: 21 days
- Lentils: 21 days
- Potatoes: 70 days
- Sunflowers: 42 days

Consult label for further PHI on special crops.

GRAZING RESTRICTIONS:
Cereals grown as a cover crop and treated with PYRINEX® 480 EC insecticide should not be harvested for human or animal consumption within 60 days of application.

STORAGE:
- Do not store near heat or open flame.
- Avoid storage at high temperatures.
- Do not freeze.

QUICK TIPS:
Avoid application under hot temperatures. Get the best control of wheat midge and cutworms by applying insecticide in the evening (after 7 p.m.) or morning (before 8 a.m.). Use enough water to get thorough coverage of the intended soil, plant or pest target. Wait 24 hours before re-entry.

Always read and follow pesticide label directions.
SILENCER® 120 EC

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

ACTIVE INGREDIENT:
Lambda-cyhalothrin

CHEMISTRY GROUP:
Group 3

APPLICATION RATES AND PACKAGING:
- 17 – 51 ml/ac or 220 – 74 ac/3.785 L jug;
- consult the label for specific application rates
- 4 x 3.785 L jugs/case

REGISTERED CROPS:
- Alfalfa
- Beans
- Canola
- Cereals (wheat, barley, oats)
- Chickpeas
- Corn (field)
- Flax
- Lentils
- Field peas
- Potatoes
- Soybeans
- Sunflowers
- Timothy
- Variety of fruits, vegetables and specialty crops

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

KEY INSECTS CONTROLLED:
- Alfalfa weevil
- Apple aphid
- Apple brown bug
- Apple leaf midge
- Armyworm (Pseudoaletia unipuncta)
- Bean aphid
- Bean leaf beetle
- Bertha armyworm
- Black vine weevil (adults)
- Bud (clipper) weevil
- Cabbage looper
- Cabbage seedpod weevil (adults)
- Carrot rust fly (Psila rosae)
- Carrot weevil (Listronotus oregonensis)
- Cherry maggot
- Codling moth
- Colorado potato beetle
- Corn borer
- Corn earworm
- Corn earworm (Helicoverpa zea)
- Crucifer flea beetle
- Cutworms
- Dark-sided cutworm
- Diamondback moth larvae
- European asparagus aphids
- European corn borer (Ostrinia nubilalis)
- 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 (Sitona lineata)
- Pear psylla (nymphs, adults)
- Plum curculio
- Potato flea beetle
- Potato leafhopper
- Prairie tent caterpillar
- Soybean aphid
- Spotted tentiform leafminer
- Sunflower beetle
- Swede midge (Contarinia nasturtii)
- Tarnished plant bug
- Tuber flea beetle
- Ugly nest caterpillar
- Corn earworm
- Western bean cutworm
- White apple leafhopper
- Winter moth
- Woolly apple aphid
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.

WATER VOLUME:
- Ground: 40 – 80 L/ac
- Aerial: 4 – 16 L/ac

RAINFASTNESS:
Not applicable.

SUPPORTED TANK MIXES:
Herbicides:
- Assert®
- BRAZEN™ II
- Clodinafop (LADDER ALL IN™)
- Everest®
- SQUADRON®
- Tralkoxydim (BISON® 400 L)

Fungicides:
- Allegro®
- Propiconazole (BUMPER® 432 EC)
- Headline® EC (azoxystrobin)
- TOPNOTCH™

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 (silage, field): 14 days
- Legumes (soybeans, beans, field peas, faba beans, chickpeas, lentils): 21 days
- Oilseeds: 7 days
- Potatoes: 7 days
- Sunflowers: 7 days
- Timothy: 14 days
- Wheat, Barley, Oats: 28 days
- Wheat for forage: 14 days

GRAZING RESTRICTIONS:
Do not graze livestock within 3 days of application.

STORAGE:
Store above 0 C.

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.
SOMBRERO® 600 FS

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

**ACTIVE INGREDIENT:** Imidacloprid

**CHEMISTRY GROUP:** Group 4

**APPLICATION RATES AND PACKAGING:**
- 8 x 1.54 L

**REGISTERED CROPS:**
- Barley
- Canola
- Corn
- Mustard
- Oats
- Soybeans
- Wheat (durum, spring, winter)

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

**KEY INSECTS CONTROLLED:**
- Bean leaf beetle
- Corn flea beetle
- Flea beetle
- Seedcorn maggot
- Soybean aphid
- Wireworms

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

**APPLICATION RATES:**
A colourant MUST be added in accordance with the PCP Act and the Seeds Act Regulations.

<table>
<thead>
<tr>
<th>Crop</th>
<th>Insect</th>
<th>Rate</th>
<th>Application Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn, Field corn for seed production</td>
<td>Wireworms</td>
<td>21.3 ml/80,000 seeds</td>
<td>Dilute in sufficient water to achieve uniform coverage on the seed. Ensure seed is adequately coloured. Other polymers and coating materials may be required.</td>
</tr>
<tr>
<td>Field corn for seed production</td>
<td>Corn flea beetle</td>
<td>80 ml/80,000 seeds</td>
<td></td>
</tr>
<tr>
<td>Wheat (durum, spring, winter), Barley, Oats</td>
<td>Wireworms</td>
<td>17 – 50 ml/100 kg seed</td>
<td>Dilute in sufficient liquid to achieve uniform coverage on the seed.</td>
</tr>
<tr>
<td>Soybeans</td>
<td>Soybean aphid, Bean leaf beetle, Seedcorn maggot, Wireworm</td>
<td>104 – 208 ml/100 kg seed</td>
<td>Use the higher rate for early seeding, when insect populations are expected to be high, and to extended control period for aphids. Dilute in sufficient liquid to achieve uniform coverage on the seed.</td>
</tr>
<tr>
<td>Canola/Mustard</td>
<td>Flea beetle</td>
<td>667 – 1333 ml/100 kg seed</td>
<td>In areas where flea beetle populations are high, use the higher application rate.</td>
</tr>
</tbody>
</table>
INSECTICIDE

SOMBRERO® 600 FS

WATER VOLUME:
Dilute in sufficient liquid to achieve uniform coverage on the seed.

TANK MIXES WITH FUNGICIDES:
- Allegiance®
- Apex
- Apron Maxx® RTA®
- Apron Maxx® RFC
- EverGo® Energy
- Insure® Cereal
- Insure® Pulse
- Rancona® Apex
- Raxil® T
- Raxil® MD
- Raxil® Pro
- Trilex® AL
- Vibrance® Quatro

MIXING INSTRUCTIONS:
1. Add fungicide.
2. Add coating agents.
3. Add SOMBRERO® 600 FS.

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

USE RESTRICTIONS:\[1\]
1. Do not use treated seed for food, feed or oil processing.
2. Do not graze or feed livestock on treated areas for 4 weeks after seeding.
3. Mustard greens grown or harvested from SOMBRERO® 600 FS treated seed can’t be used for human consumption.
4. Treated canola, rapeseed or mustard (condiment type only) seed stored for periods exceeding 6 months may decrease in germination at a faster rate than untreated seed. Treated seed stored for more than 6 months should be tested for germination before seeding. Do not store treated seed above 25 C or in direct sunlight.
5. This chemical demonstrates the properties and characteristics associated with chemicals detected in ground water. Using it in areas where soils are permeable, or the water table is shallow, may result in ground water contamination.

\[1\] All bags containing treated seed must be labelled or tagged. Please see label for instructions.

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

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CUSTODIA™ ........................................... 69
ORIUS™ 430 SC ....................................... 71
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FUNGICIDE

BUMPER® 432 EC

Broad spectrum systemic fungicide widely used at herbicide timing in cereals for economical early protection.

ACTIVE INGREDIENT: Propiconazole
CHEMISTRY GROUP: Group 3

APPLICATION RATES AND PACKAGING:
- 60 ml/ac or 80 ac/4.8 L jug in wheat and barley for early season control
- 120 ml/ac or 40 ac/4.8 L jug at the full rate
- 2 x 4.8 L jugs/case
- For fruit and specialty crops, 120 – 180 ml/ac (see label for details)

REGISTERED CROPS:
- Barley
- Canary seed
- Canola
- Corn
- Dry edible beans
- Oats
- Soybeans
- Wheat (spring, winter, durum)
- Variety of specialty crops

KEY DISEASES CONTROLLED:
- Blackleg
- Frogeye leaf spot
- Net and spot blotches
- Powdery mildew
- Rusts
- Septoria spots and blotches
- Scalds
- Tan spots

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:

<table>
<thead>
<tr>
<th>Crop</th>
<th>Diseases</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>½ rate at 60 ml/ac</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barley</td>
<td>Net blotch</td>
<td>Early: Growth stage 12 – 23, as early as the 2-leaf stage.</td>
</tr>
<tr>
<td>Wheat</td>
<td>Septoria leaf spot, Tan spot</td>
<td></td>
</tr>
<tr>
<td>Full rate at 120 ml/ac</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barley</td>
<td>Leaf and stem rust, Septoria leaf spot, Net blotch, Powdery mildew, Scald, Spot blotch</td>
<td>Early: Growth stage 29 – 37, at the first sign of disease, usually at the beginning of stem elongation.</td>
</tr>
<tr>
<td>Oats</td>
<td>Crown rust, Septoria leaf blotch</td>
<td>Later: Growth stage 49 – 55, before head is ½ emerged.</td>
</tr>
<tr>
<td>Wheat</td>
<td>Leaf and stem rust, Powdery mildew, Septoria glume blotch, Septoria leaf spot, Stripe rust, Tan spot</td>
<td></td>
</tr>
<tr>
<td>Canary seed</td>
<td>Septoria leaf mottle</td>
<td>At emergence of the flag leaf.</td>
</tr>
<tr>
<td>Canola</td>
<td>Blackleg</td>
<td>Rosette stage, between 2nd true leaf and bolting.</td>
</tr>
<tr>
<td>Corn</td>
<td>Eye spot, Grey leaf spot, Helminthosporium leaf spot, Northern corn leaf blight, Rusts, Southern corn leaf blight</td>
<td>When disease first appears.</td>
</tr>
<tr>
<td>Soybeans (for seed)</td>
<td>Frogeye leaf spot, Aerial web blight</td>
<td>When disease first appears. Under severe disease pressure, make a 2nd application 14 days after the first.</td>
</tr>
<tr>
<td>Dry edible beans</td>
<td>Rust</td>
<td>At the first detection of disease and a 2nd application 14 – 21 days later.</td>
</tr>
</tbody>
</table>
FRUIT AND SPECIALTY CROP USES:

<table>
<thead>
<tr>
<th>Crop</th>
<th>Diseases</th>
<th>PHI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cranberries</td>
<td>Cottonball (<em>Monilinia oxycocci</em>)</td>
<td>45</td>
</tr>
<tr>
<td>Kentucky bluegrass grown for seed</td>
<td>Powdery mildew</td>
<td></td>
</tr>
<tr>
<td>Lowbush blueberries</td>
<td>Monilinia blight (mummy berry)</td>
<td>60</td>
</tr>
<tr>
<td>Highbush blueberries</td>
<td>Mummy berry (<em>Monilinia vaccinii-corymbosi</em>)</td>
<td>60</td>
</tr>
<tr>
<td>Peaches, Nectarines, Plums, Apricots</td>
<td>Brown rot blossom blight, Fruit brown rot</td>
<td>3</td>
</tr>
<tr>
<td>Sweet and sour cherries</td>
<td>Brown rot blossom blight, Fruit brown rot, Cherry leaf spot (<em>Blumeriella jaapii</em>)</td>
<td>3</td>
</tr>
<tr>
<td>Plums, Sour cherries</td>
<td>Black knot (<em>Apiosporina morbosa</em>) (suppression only)</td>
<td>3</td>
</tr>
<tr>
<td>Rutabagas</td>
<td>Powdery mildew</td>
<td>21</td>
</tr>
<tr>
<td>Asparagus</td>
<td>Rust (<em>Puccinia asparagi</em>)</td>
<td>8</td>
</tr>
<tr>
<td>Saskatoon berries</td>
<td>Entomosporium leaf and berry spot, Saskatoon juniper rust</td>
<td>38</td>
</tr>
<tr>
<td>Western red cedar</td>
<td>Keithia foliar blight</td>
<td></td>
</tr>
<tr>
<td>Strawberries</td>
<td>Leaf spot</td>
<td>1</td>
</tr>
</tbody>
</table>

WATER VOLUME:
- Ground: minimum 80 L/ac
- Aerial: 16 – 20 L/ac

RAINFASTNESS:
- 1 hour

SUPPORTED TANK MIXES:
Herbicides:
- Wheat and barley: 2,4-D amine, 2,4-D ester, Bromoxynil + MCPA ester (*BADGE® II*), Bromoxynil (*BROMOTRIL® II*), MCPA amine, MCPA ester, *BRAZEN™ II*
- Wheat only: Clodinafop (*LADDER ALL IN™*)

Insecticides:
- Lambda-cyhalothrin (*SILENCER® 120 EC*)
- *Ripcord™*

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

GRAZING RESTRICTIONS:
Do not graze livestock within 3 days of spraying.

STORAGE:
No temperature restrictions.

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.

Always read and follow pesticide label directions.
CUSTODIA™

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

ACTIVE INGREDIENTS:
Tebuconazole and azoxystrobin

CHEMISTRY GROUPS:
Group 3 and Group 11

APPLICATION RATES AND PACKAGING:
- Wheat: 0.19 L/ac – 0.25 L/ac
- Packaging: 2 x 10.08 L case

REGISTERED CROPS:
- Wheat (spring, winter, durum) · Barley

KEY DISEASES CONTROLLED:
- Leaf rust · Tan spot
- Stem rust · Net blotch
- Stripe rust · Spot blotch
- Septoria leaf 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.

CROP STAGING:

<table>
<thead>
<tr>
<th>Crop</th>
<th>Diseases</th>
<th>Application Timing</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat (spring, winter, durum)</td>
<td>Leaf rust, Stem rust, Stripe rust, Septoria leaf blotch, Tan spot</td>
<td>Apply CUSTODIA™ to leaf foliage at the first sign or very early stage of disease, up to the beginning of heading. Use of the higher rate should be considered when weather conditions are conducive to heavy disease development.</td>
<td>0.19 L/ac – 0.25 L/ac</td>
</tr>
<tr>
<td>Barley</td>
<td>Net blotch, Spot blotch, Leaf rust, Stem rust, Stripe rust, Septoria leaf blotch, Tan spot</td>
<td>Apply CUSTODIA™ to leaf foliage at the first sign or very early stage of disease, up to the beginning of heading. Use of the higher rate should be considered when weather conditions are conducive to heavy disease development.</td>
<td>0.19 L/ac – 0.25 L/ac</td>
</tr>
</tbody>
</table>
CUSTODIA™ Fungicide

**WATER VOLUME:**
- Ground: 40 L/ac or 10 gal/ac
- Aerial: 20 L/ac or 5 gal/ac

**RAINFASTNESS:**
Avoid application when heavy rain is forecast.

**MIXING INSTRUCTIONS:**
1. For ground application use 40 L/ac, for aerial use 20 L/ac.
2. Use a 50-mesh (or coarser) filter screen.
3. Fill the spray tank ¾ full with water.
4. Add the required amount of CUSTODIA™ Foliar Fungicide into the sprayer.
5. Agitate until the fungicide is thoroughly mixed.
6. Continue agitation and add the required amount of the tank-mix partner.
7. Complete filling the tank to the desired level with water.
8. 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.
9. Repeat sprayer cleanout process using an appropriate spray system cleaner.

**CROP ROTATIONS:**
No restrictions.

**PRE-HARVEST INTERVALS:**
- Mature grains: 36 days
- Forage, hay: 6 days

**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:**
- Store above 5 C 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 from freezing.

**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 control, we would recommend an application of ORIUS™ 430 SC 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.

Always read and follow pesticide label directions.
ORIUS™ 430 SC

Your tool of choice. ORIUS™ 430 SC is a new fungicide offering 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
CHEMISTRY GROUP: Group 3

APPLICATION RATES AND PACKAGING:
- Wheat: 89 ml/ac – 118 ml/ac
- Barley: 89 ml/ac – 118 ml/ac
- Oats: 89 ml/ac
- Packaging: 2 x 9.44 L case

REGISTERED CROPS:
- Wheat (spring, winter, durum)
- Barley
- Oats

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:
ORIUS™ 430 SC Foliar Fungicide can be applied as a post-emergent treatment in wheat (spring, winter, durum), barley and oats for the suppression of fusarium head blight and control of foliar diseases.

CROP STAGING:

<table>
<thead>
<tr>
<th>Crop</th>
<th>Diseases</th>
<th>Application Timing</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat (spring,</td>
<td>For suppression of Fusarium head blight, for</td>
<td>For optimum suppression of fusarium head blight and control of septoria glume blotch, apply ORIUS™ 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.</td>
<td>118 ml/ac</td>
</tr>
<tr>
<td>winter, durum)</td>
<td>control of Septoria glume blotch</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rusts (leaf, stem, stripe), Septoria leaf blotch, Tan spot</td>
<td>Apply ORIUS™ 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. Considered using the higher rate when weather conditions are conducive to heavy disease development.</td>
<td>89 – 118 ml/ac</td>
</tr>
<tr>
<td></td>
<td>Powdery mildew</td>
<td>Apply ORIUS™ 430 SC Foliar Fungicide at the very early stages of disease development. Considered using the higher rate when weather conditions are conducive to heavy disease development.</td>
<td>89 – 118 ml/ac</td>
</tr>
<tr>
<td>Barley</td>
<td>Net blotch, Spot blotch, Scald, Rusts (leaf,</td>
<td>Apply ORIUS™ 430 SC Foliar Fungicide at the very early stages of disease development. Considered using the higher rate when weather conditions are conducive to heavy disease development.</td>
<td>89 ml/ac</td>
</tr>
<tr>
<td></td>
<td>stem and stripe), Septoria leaf blotch, Powdery mildew</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oats</td>
<td>Stem rust</td>
<td>Apply ORIUS™ 430 SC Foliar Fungicide at the very early stages of disease development.</td>
<td></td>
</tr>
</tbody>
</table>
QUICK TIPS:

ORIUS™ 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 ORIUS™ 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 ORIUS™ 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. ORIUS™ 430 SC Foliar Fungicide is recommended to be used with a registered non-ionic surfactant, such as Agral® 90 or Ag-Surf®, at 0.125% v/v.
TOPNOTCH™

A new broad spectrum, multi-mode of action option for control of dangerous diseases in pulses as well as cereal leaf diseases.

ACTIVE INGREDIENTS:
Azoxystrobin and propiconazole

CHEMISTRY GROUPS:
Group 3 (propiconazole) and Group 11 (azoxystrobin)

APPLICATION RATES AND PACKAGING:
- 2 x 8.6 L jugs/case

REGISTERED AND SUPPORTED CROPS:
- Barley
- Edible beans
- Field peas
- Lentils
- Oats
- Rye
- Soybeans
- Triticale
- Wheat

KEY DISEASES CONTROLLED:
- Anthracnose
- Ascochyta blight
- Barley leaf rust
- Mycosphaerella blight
- Net and spot blotches
- Powdery mildew
- Scald
- Septoria spot
- Stripe rust
- Tan spot
- Wheat leaf rust
- White mould¹

¹Suppression only.

HOW IT WORKS:
Used as both a curative and preventative fungicide, TOPNOTCH™ has broad-spectrum, systemic and contact activity.

APPLICATION TIMING AND CROP STAGING:

<table>
<thead>
<tr>
<th>Crop</th>
<th>Diseases</th>
<th>Application Timing</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barley</td>
<td>Barley net blotch, Barley scald, Septoria leaf spot, Stripe rust, Barley leaf rust, Tan spot</td>
<td>Apply once between stem elongation and half-head emergence (Growth stage 29 – 55).</td>
<td>0.21 L/ac</td>
</tr>
<tr>
<td>Beans, Field peas, Lentils, Soybeans</td>
<td>Mycosphaerella blight, Anthracnose, Ascochyta blight (lentils only)</td>
<td>Make the first application at the first sign of disease. Apply the high rate only under conditions of high disease pressures. A second application 14 days later may be needed if conditions persist. Good spray coverage and canopy penetration are important for best results.</td>
<td>0.31 – 0.62 L/ac</td>
</tr>
<tr>
<td></td>
<td>Powdery mildew, White mould (suppression only)</td>
<td></td>
<td>0.31 L/ac</td>
</tr>
<tr>
<td>Oats</td>
<td>Barley net blotch, Crown rust, Septoria leaf spot</td>
<td>Apply once between stem elongation and half-head emergence (Growth stage 29 – 55).</td>
<td>0.21 L/ac</td>
</tr>
<tr>
<td>Crop</td>
<td>Diseases</td>
<td>Application Timing</td>
<td>Rate</td>
</tr>
<tr>
<td>------------</td>
<td>-----------------------------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Rye</td>
<td>Septoria leaf spot, Barley scald, Tan spot</td>
<td>Apply once between stem elongation and half-head emergence (Growth stage 29 – 55).</td>
<td>0.21 L/ac</td>
</tr>
<tr>
<td>Triticale</td>
<td>Septoria leaf spot, Tan spot</td>
<td>Apply once between stem elongation and half-head emergence (Growth stage 29 – 55).</td>
<td>0.21 L/ac</td>
</tr>
<tr>
<td>Wheat</td>
<td>Septoria leaf spot, Tan spot, Stripe rust, Wheat leaf rust</td>
<td>Apply once between stem elongation and half-head emergence (Growth stage 29 – 55).</td>
<td>0.21 L/ac</td>
</tr>
<tr>
<td>Durum wheat</td>
<td>Septoria leaf spot, Tan spot, Stripe rust</td>
<td>Apply once between stem elongation and half-head emergence (growth stage 29 – 55)</td>
<td>0.21 L/ac</td>
</tr>
</tbody>
</table>

**WATER VOLUME:**
- Ground: minimum 100 L/ha or 40 L/ac
- Aerial: 45 L/ha or 20 L/ac

**RAINFASTNESS:**
- Do not apply when rain is imminent.
- Leaf coverage and penetration is critical for use.

**SUPPORTED TANK MIXES:**

### Herbicides:
- BRAZEN™ II
- Broadband®
- Clodinafop-propargyl (LADDER ALL IN™, Horizon®)
- Sierra®
- Touchdown Total®
- Traxion™

### Insecticides:
- Lambda-cyhalothrin (SILENCER® 120 EC, Matador®)

### Fungicides:
- Quadris®

**MIXING INSTRUCTIONS:**
1. Fill spray tank ½ – ¾ full with water.
2. With agitator running, add required amount of TOPNOTCH™ and continue agitating while adding remainder of the water.
3. Begin application after TOPNOTCH™ is completely dispersed into the mix water, and maintain agitation during spraying operation.

**CROP ROTATIONS:**
Do not plant any other crop intended for food, grazing or any component of animal feed or bedding within 105 days of application.

**PRE-HARVEST INTERVALS:**
- Cereals: 45 days
- Field peas, Beans, Soybeans: 15 days
- Lentils: 30 days

**GRAZING RESTRICTIONS:**
No restrictions.

**STORAGE:**
Do not store below 0 C.

**QUICK TIPS:**
Good spray coverage and canopy penetration are important to achieve the best results.
**TANK-MIXING INSTRUCTIONS**

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

<table>
<thead>
<tr>
<th>W</th>
<th>Wettable powders, dispersible granules, soluble granules (WG, DF, SG, WP, SP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Agitate tank mix thoroughly</td>
</tr>
<tr>
<td>M</td>
<td>Micro-encapsulated suspensions (ME)</td>
</tr>
<tr>
<td>L</td>
<td>Liquid flowables and suspensions (SC, SL, SN, LI, SU, SE)</td>
</tr>
<tr>
<td>E</td>
<td>Emulsifiable concentrate formulations (EC)</td>
</tr>
</tbody>
</table>

*Fill spray tank nearly full with water.*

<table>
<thead>
<tr>
<th>G</th>
<th>Glyphosate formulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>Surfactants</td>
</tr>
</tbody>
</table>

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.
<table>
<thead>
<tr>
<th>Metric Unit</th>
<th>Imperial Unit</th>
<th>Multiply by</th>
<th>Metric Unit</th>
<th>Multiply by</th>
</tr>
</thead>
<tbody>
<tr>
<td>LINEAR</td>
<td>centimetre (cm)</td>
<td>x 2.54</td>
<td>AREA</td>
<td>square metre (m²)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>hectare (ha)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>litre (L)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>litre (L)</td>
</tr>
<tr>
<td>VOLUME</td>
<td>litre (L)</td>
<td>x 0.22</td>
<td>PRESSURE</td>
<td>kilopascals (kPa)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x 0.27</td>
<td></td>
<td>psi</td>
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<td>imperial gallons per acre</td>
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<td>U.S. gallons per acre</td>
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<td></td>
<td>quarts per acre</td>
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<td></td>
<td>pints per acre</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Imperial fl. oz per acre</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>U.S. fl. oz per acre</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>lb per acre</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>oz per acre</td>
</tr>
<tr>
<td>AREA</td>
<td>square metre (m²)</td>
<td>x 0.09</td>
<td>AGRICULTURAL</td>
<td>litres per hectare (L/ha)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>litres per hectare (L/ha)</td>
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<td>litres per hectare (L/ha)</td>
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<td>litres per hectare (L/ha)</td>
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<td></td>
<td></td>
<td>millilitres per hectare (ml/ha)</td>
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<td></td>
<td></td>
<td>kilograms per hectare (kg/ha)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>grams per hectare (g/ha)</td>
</tr>
</tbody>
</table>

EXAMPLE: To convert centimetres to inches, multiply by 0.39; conversely, to convert inches to centimetres, multiply by 2.54.
# Phenoxy Use Rates

<table>
<thead>
<tr>
<th>Active Ounces per Acre</th>
<th>Formulation (ml per acre)</th>
<th>Acres Treated per 10 L Jug</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>300</td>
<td>400</td>
</tr>
<tr>
<td>1</td>
<td>94</td>
<td>70</td>
</tr>
<tr>
<td>2</td>
<td>187</td>
<td>140</td>
</tr>
<tr>
<td>3</td>
<td>281</td>
<td>211</td>
</tr>
<tr>
<td>4</td>
<td>374</td>
<td>281</td>
</tr>
<tr>
<td>5</td>
<td>468</td>
<td>351</td>
</tr>
<tr>
<td>6</td>
<td>562</td>
<td>421</td>
</tr>
<tr>
<td>7</td>
<td>655</td>
<td>526</td>
</tr>
<tr>
<td>8</td>
<td>749</td>
<td>632</td>
</tr>
</tbody>
</table>

Recommended rates have been rounded to whole numbers.
CONTACT INFO

PROSAR (U.S. & Canada):
1.800.331.3148

INFOTRAC: 1.800.535.5053

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

Alberta Agriculture and Forestry
Ag-Info Centre
7000-113th Street
Edmonton, AB T6H 5T6
Phone: 403.742.7901
Toll-free in Alberta:
310.FARM (3276)
Email: duke@gov.ab.ca
agric.gov.ab.ca

Manitoba Agriculture, Food
and Rural Development
Find a GO Office at
gov.mb.ca/agriculture
Email: mafweb@gov.mb.ca

Saskatchewan Ministry of Agriculture
45 Thatcher Drive East
Moose Jaw, SK S6J 1L8
Agriculture Knowledge Centre
Toll-free: 1.866.457.2377
saskatchewan.ca/agriculture

ASSOCIATIONS AND COUNCILS:
Canola Council of Canada
400-167 Lombard Avenue
Winnipeg, MB R3B 0T6
Phone: 1.866.834.4378
canolacouncil.org

Canadian Canola Growers Association
400-1661 Portage Avenue
Winnipeg, MB R3J 3T7
Phone: 204.788.0090
Toll-free: 1.866.745.2256
ccgca.ca

Manitoba Canola Growers
400-167 Lombard Avenue
Winnipeg, MB R3B 0T6
Phone: 204.982.2122
Email: info@canolagrowers.com
canolagrowers.com

SaskCanola
212-111 Research Drive
Saskatoon, SK S7N 3R2
Phone: 306.975.0262
Toll-free: 1.877.241.7044
Email: info@saskcanola.com
saskcanola.com

Alberta Canola Producers Commission
14560-116 Avenue NW
Edmonton, AB T5M 3E9
Phone: 780.454.0844
Email: web@albertacanola.com
albertacanola.com

Pulse Canada
1212-220 Portage Avenue
Winnipeg, MB R3C 0A5
Phone: 204.925.4455
Email: office@pulsecanada.com
pulsecanada.com

Alberta Pulse Growers
5007B-49 Avenue
Leduc, AB T9E 6M6
Phone: 780.986.9398
Toll-free: 1.877.550.9398
pulse.ab.ca

Saskatchewan Pulse Growers
207-116 Research Drive
Saskatoon, SK S7N 3R3
Phone: 306.668.5556
Email: pulse@saskpulse.com
saskpulse.com

Manitoba Pulse & Soybean Growers
P.O. Box 1760
38-4th Avenue NE
Carman, MB R0G 0J0
Phone: 204.745.6488
Toll-free: 1.866.226.9442
manitobapulse.ca

Soy Canada
130 Albert Street, Suite 1607
Ottawa, ON K1P 5G4
Phone: 613.233.0500
Email: info@soycanada.ca
soycanada.ca

Canadian Special Crops Association
1215-200 Portage Avenue
Winnipeg, MB R3C 0A5
Phone: 204.925.3780
specialcrops.mb.ca
CONTACT INFO

Cereals Canada
604-167 Lombard Avenue
Winnipeg, MB R3B 0V5
Phone: 204.942.2166
Email: info@cerealscanada.ca
cerealscanada.ca

Alberta Wheat Commission
#200, 6815-8th Street NE
Calgary, AB T2E 7H7
Phone: 403.717.3711
Toll-free: 1.855.917.3711
albertawheat.com

BC Grain Producers Association
Box 6004
Fort St. John, BC V1J 4H6
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Western Canadian Wheat Growers
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Email: info@wheatgrowers.ca
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Grain Growers of Canada
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Alberta Barley
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SaskBarley Development Commission
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Prairie Oat Growers Association
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Manitoba Corn Growers Association
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Saskatchewan Flax Development Commission
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Manitoba Flax Growers Association
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National Sunflower Association of Canada
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Saskatchewan Seed Potato Growers Association
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Potato Growers of Alberta
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