Why it’s important to rotate crop protection products

By Dr. Hugh Beckie
Research Scientist, Agriculture and Agri-Food Canada

Crop pests – whether insects, pathogens, or weeds – can quickly adapt to the same management practices used year in and year out. Chief among these practices is pesticide usage. It is important to keep them guessing what is coming next. Weeds resistant to many of our commonly used herbicides are becoming widespread across the Canadian cropland since their initial discovery back in 1988. Currently, 11 million acres of cropland are estimated to be infested with a herbicide-resistant weed, such as wild oats, green foxtail, and kochia. Resistant weeds can increase herbicide costs and reduce crop yield or quality. Most importantly, you can permanently lose some valuable herbicide tools.

Herbicides are categorized into groups based on how they kill weeds. Each group has an assigned number. Because weeds are usually only resistant to one or more herbicides within a group and not across different groups, rotating among herbicide groups in a field over successive growing seasons is an effective way to slow down how fast resistance is developing. Herbicide mixtures using partners from different groups to control your target weeds are another option (for example, group 2+group 4). To be effective, though, both partners must control the weed you are targeting for resistance management.

Different herbicide groups pose different risks for selecting for weed resistance, so it is important to use the high-risk products more sparingly than those that pose a low or moderate risk. This information can be found in your provincial crop protection guide. The challenge, of course, is limited herbicide group options in some crops, such as post-emergence in-crop products in wheat. The good news is that new herbicides from new groups are being brought to market or are in the pipeline. Nevertheless, we can’t depend on these new products always coming to the rescue. Their rate of commercialization has slowed dramatically during the past 20 years. Moreover, we are losing some of our older herbicides. We need to preserve the effectiveness of the products we have now, so use them wisely in conjunction with good agronomic practices that reduce weed emergence, growth, seed return and spread. The bottom line is: only apply herbicides when needed. A healthy competitive crop within a diversified cropping system will go a long way to maximize the effectiveness of your herbicide tools and reduce the yield-robbing ability of both resistant and non-resistant weeds.
United Agri Products Canada Ltd.

In the complex world of food production, UAP is helping meet the challenges of higher crop yields and healthier production practices. UAP is pleased to bring a wide range of proven herbicides to the agricultural and horticultural marketplace across Canada.

UAP carries over 50 herbicides for control of a wide range of weeds in most field, horticulture and specialty crops. Choose from proven broadleaf herbicides like Sword, Turboprop and Oracle, which control many of your toughest annual and perennial broadleaf weeds, or look to Avadex, Fortress and Bonanza for control of grassy weeds in broadleaf or cereal crops.

In this brochure you will find information on our most popular herbicides. If you can’t find the solution to your weed problems here, call your nearest crop input dealer to find out more about UAP’s complete herbicide product line — herbicides that protect your yield potential and deliver high value to your farm’s bottom line.

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Arrow 240 EC is a selective, post-emergence systemic herbicide for control of a broad range of grasses and volunteer cereals in broadleaf and other key field crops.

**CROPS:** Canola, flax, field pea, lentil, desi and kabuli chickpeas, dry onion, potato, mustard, soybean, seedling alfalfa, sunflower and dry bean.

**TIMING:**
- **Annual grasses and volunteer cereals:** apply in the 2 to 6-leaf stage.
- **Quackgrass:** apply in the 2 to 6-leaf stage and in the 6 to 15cm height. It is most effective at the 3 to 5-leaf stage when canopy is uniform and actively growing.

**WEEDS CONTROLLED:**
- Foxtail (green and yellow)
- Wild oats
- Volunteer cereals (wheat, barley, oats)
- Persian darnel
- Barnyard grass
- Witchgrass
- Fall panicum
- Crabgrass (smooth and large)
- Volunteer corn
- Volunteer canary grass
- Quackgrass

**TANK MIXES:**
- Badge™
- MCPA Ester
- Lontrel™ 360
- Glyphosate
- Pursuit®
- Muster®
- Liberty®
- Curtail® M

**RE-CROPPING:** No restrictions the year after treatment.

**ACTIVE INGREDIENT:** Clethodim 240 g/L.

**HERBICIDE GROUP:** Group 1.

**ADJUVANT:** Arrow 240 EC is to be used only with the adjuvant MANA X-Act.
Avadex MicroActiv herbicide is a granular herbicide for fall or spring treatment in conventional and direct seeding systems to control wild oats in durum and spring wheat, barley, rapeseed (including canola), flax (not including low linolenic varieties), mustard, sugar beets and canary grass.

Avadex MicroActiv is an excellent resistance management tool. It is a Group 8 herbicide and controls wild oats that have developed resistance to Group 1 and Group 2 post-emergence herbicides. Putting Avadex MicroActiv into rotation with post-emergence herbicides can lengthen the useful life of those herbicides.

**CROPS:** Spring and durum wheat, barley, rapeseed (including canola), flax (not including low linolenic acid varieties), mustard, sugar beets and canary grass.

**TIMING:**

_Fall Treatment:_ Fall minimum tillage applications should be made when the average soil temperature at the 5cm depth is 4º C or less and within three weeks of soil freeze up. This situation generally occurs by October 1 across the Prairies.

_Spring Treatment:_ Apply Avadex MicroActiv herbicide in the spring when average soil temperature at the 5cm depth is 4º C or greater. Application should be made to soils which have adequate trash cover to prevent soil erosion between application and seeding. Ensure that the time between application and incorporation is a minimum of 10 to 14 days. Do not apply more than four weeks before intended seeding.

**WEEDS CONTROLLED:** Wild oats.

**RE-CROPPING:** No restrictions the year following application.

**ACTIVE INGREDIENT:** Triallate 10%.

**HERBICIDE GROUP:** Group 8.
Extra Strength Avadex BW herbicide is an emulsifiable concentrate formulation for fall or spring treatment to control wild oat in spring and durum wheat, barley, rapeseed (including canola), flax (not including low linolenic acid varieties), mustard, sugar beets and dry pea.

Extra Strength Avadex BW is an excellent resistance management tool. It is a Group 8 herbicide and controls wild oats that have developed resistance to Group 1 and Group 2 post-emergence herbicides. Putting Avadex BW into rotation with post-emergence herbicides can lengthen the useful life of those herbicides.

**CROPS:** Spring and durum wheat, barley, rapeseed (including canola), flax (not including low linolenic acid varieties), mustard, sugar beets and dry pea.

**TIMING:**

**Fall Treatment**

Fall applications of this product must be made after October 1 and until soil freeze-up. Applications made before October 1 may result in reduced effectiveness of the herbicide. See the “Field Preparation” and “How to Incorporate” sections of the label for additional information.

**Spring Treatment**

This product can be applied either before or after seeding labeled crops, except as noted on the label. For applications before seeding, seed to the proper depth immediately or up to three weeks after application. Superior wild oat control is generally achieved from applications made before seeding.

For applications made after seeding, application and both incorporations must be completed prior to emergence of the crop. For after-seeding applications, optimum wild oat control is achieved when the application and incorporation is made as soon as possible after seeding. See the “Field Preparation” and “How to Incorporate” sections of the label for additional information.

**WEEDS CONTROLLED:** Wild oats.

**TANK MIXES:** Bonanza®, Treflan® or Rival® (Trifluralin).

**RE-CROPPING:** No restrictions the year following application.

**ACTIVE INGREDIENT:** Triallate 480 g/L.

**HERBICIDE GROUP:** Group 8.

**NOW IN 500L REPEATER**

Always read and follow label directions
Badge is a broad-spectrum herbicide for the control of broadleaf weeds in cereals, flax, canary seed, and established and seedling grasses. Badge brings trusted weed control, grassy herbicide tank-mix flexibility, and proven crop safety to growers looking to manage their weed problems while improving their bottom line.

**CROPS:** Barley, canary seed, corn, durum wheat, fall rye, flax, wheat, winter wheat, seedling and established grasses, (not underseeded to legumes) and non-crop areas. Follow label directions for application timing.

**WEEDS CONTROLLED/TIMING:**

<table>
<thead>
<tr>
<th>Weeds controlled up to 4-leaf stage:</th>
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</thead>
<tbody>
<tr>
<td>American nightshade</td>
<td>Night-flowering catchfly</td>
</tr>
<tr>
<td>Ball mustard</td>
<td>Pale smartweed</td>
</tr>
<tr>
<td>Bluebur</td>
<td>Redroot pigweed*</td>
</tr>
<tr>
<td>Cocklebur</td>
<td>Russian thistle**</td>
</tr>
<tr>
<td>Cow cockle****</td>
<td>Scentless chamomile***</td>
</tr>
<tr>
<td>Flixweed</td>
<td>Shepherd’s-purse</td>
</tr>
<tr>
<td>Green smartweed</td>
<td>Velvetleaf*****</td>
</tr>
<tr>
<td>Kochia**</td>
<td>Volunteer canola</td>
</tr>
<tr>
<td>Lady’s-thumb</td>
<td>Volunteer sunflower</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Weeds controlled up to 6-leaf stage:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild tomato</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Weeds controlled up to 8-leaf stage:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Common groundsel</td>
<td>Common ragweed</td>
</tr>
<tr>
<td>Lamb’s-quarters</td>
<td>Stinkweed</td>
</tr>
<tr>
<td>Common buckwheat</td>
<td>Tartary buckwheat</td>
</tr>
<tr>
<td>Wild buckwheat</td>
<td>Wild mustard</td>
</tr>
<tr>
<td>Wormseed mustard</td>
<td>Top growth control</td>
</tr>
<tr>
<td>Canada thistle</td>
<td>Perennial sow-thistle</td>
</tr>
</tbody>
</table>

*May not be controlled in flax.
**Control before weeds are 5cm tall.
***Spring seedlings only.
****In normal conditions cow cockle will be controlled up to the 4-leaf stage. Weeds beyond this stage are unlikely to be controlled.
*****Spray before weeds are 8cm high.

**NOW IN 500L REPEATER**

Always read and follow label directions.
TANK MIXES:
Wheat: Achieve® 80DG or 40DG, Avenge® 200-C, Horizon®, Puma® 120, Everest®, MCPA, Ally®, Refine Extra® and most Nortrace® plant nutrients.*
Barley: Achieve® 80DG or 40DG, Avenge®, MCPA, Ally®, Refine Extra® and most Nortrace plant nutrients.*
Corn: Atrazine.
Flax: Poast Ultra®, Select®, and most Nortrace® plant nutrients.*
Oats: MCPA.

RE-CROPPING: No restrictions the year after application.

ACTIVE INGREDIENT: Bromoxynil (225 g/L), MCPA (225 g/L).
Present as esters.

HERBICIDE GROUP: Group 4 and 6.

ADJUVANT: None, except if required by tank-mix partner; follow the tank-mix partner’s label.

*Refer to product label and use a jar test for compatibility testing.

NOW IN 500L REPEATER
Bonanza®

Bonanza is a soil-incorporated trifluralin herbicide for control of a broad spectrum of annual grass and broadleaf weeds in many oilseeds, specialty crops, vegetables and orchards. Bonanza can also be used for weed control on summerfallow fields, and for shelterbelt establishment.

CROPS: Canola, lentil, flax, pea, mustard, sunflower, faba bean, soybean, dry bean, black bean, safflower, alfalfa establishment, barley, some vegetable crops and wheat (at reduced rates).

TIMING: Application can be made in summer, fall or spring prior to seeding.

WEEDS CONTROLLED:

Annual Grasses:
- Annual bluegrass
- Barnyard grass
- Bromegrass
- Cheat
- Crabgrass

Annual Broadleaves:
- Carpetweed
- Chickweed
- Cow cockle
- Knotweed
- Lamb’s-quarters

- Goosegrass
- Green and yellow foxtail
- Persian darnel
- Stinkgrass
- Wild oats

- Pigweed
- Purslane
- Russian thistle
- Wild buckwheat
- Wild oats

- May not be fully controlled.

TANK MIXES: Sencor®, Lexone®, Basagran® or Avadex® BW. Consult label for registered crops.

RE-CROPPING: Oats, canary seed and small-seeded grasses and sugar beets may be affected the year after the treated crop. Corn is sensitive at higher rates. Crop injury may occur to rotational crops if dry soil conditions occurred during the first growing season.

ACTIVE INGREDIENT: Trifluralin; Bonanza 10G formulated as a 10% granular; Bonanza 480 formulated as a 480 g/L liquid.

HERBICIDE GROUP: Group 3.

ADJUVANT: None required.

Always read and follow label directions.
Bromotril® 240 EC

Bromotril 240 EC is a selective, post-emergence herbicide for control of a range of broadleaf weeds in cereals and other crops.

CROPS: Wheat (spring and winter), barley, oats, flax (including low linolenic acid varieties), corn, fall rye, canary grass (for seed production), triticale, garlic, seedling alfalfa, established alfalfa (for seed production only), seedling grasses, forage sorghum, and forage millet.

TIMING: For best results, spray when weeds are in the seedling stage. Apply in good growing conditions before the crop shields the weeds. May be applied by air on wheat and barley only (consult label for aerial application guidelines).

WEEDS CONTROLLED:

Seedling stage up to 4-leaf stage:

- Green smartweed
- Pale smartweed
- Lady’s-thumb
- Wild mustard
- Kochia

Seedling stage up to 8-leaf stage:

- Wild buckwheat
- Tartary buckwheat
- Common buckwheat

Tank Mixes: MCPA, 2,4-D, Avenge®, Achieve®, Horizon®, Atrazine, Banvel®, Ultim®, Accent®, Roundup®.

RE-CROPPING: No restrictions the year following application.

ACTIVE INGREDIENT: Bromoxynil 240 g/L.

HERBICIDE GROUP: Group 6.

ADJUVANT: Not required when used alone, see tank-mix partner labels for surfactants needed with tank mixes.
Caliber 625 is a post-emergent herbicide, which controls broadleaf weeds in legumes and grasses, including underseeded new plantings, established stands and new seedlings of alfalfa and clover.

**CROPS:** Wheat, barley, oats, field corn, seedling alfalfa and birdsfoot trefoil, seedling clover, seedling grasses for forage including smooth bromegrass, creeping red fescue, meadow fescue, tall fescue, orchard grass, timothy, crested wheatgrass, intermediate wheatgrass, streambank wheatgrass, and tall wheatgrass and pastures containing forage legumes.

**TIMING:**
- **Cereals:** apply after the crop has five fully expanded leaves but before the early flag leaf stage.
- **Corn:** apply after the crop is 40cm tall but before tasselling.
  Drop nozzles recommended.
- **Seedling legumes:** apply in the 1st to 4th trifoliate leaf stage.
- **Seedling grasses:** apply in the 2 to 4-leaf stage.

**WEEDS CONTROLLED:**
- Ball mustard
- Bull thistle
- Canada thistle
- Chicory
- Curled dock
- Dandelion
- Field bindweed
- Green smartweed
- Horsetail
- Lady's-thumb
- Lamb's-quarters
- Narrow-leaved hawk's beard
- Oak-leaved goosefoot
- Perennial sow-thistle
- Plantain
- Ragweed
- Redroot pigweed
- Shepherd's-purse
- Stinkweed
- Wild buckwheat
- Wild mustard
- Wild radish
- Wormseed mustard
- Yellow rocket

**TANK MIXES:** Achieve® 80DG, Avenge®, MCPA Amine 500, and Venture® L.

**RE-CROPPING:** No restrictions the year following application.

**ACTIVE INGREDIENT:** 2,4-DB 625 g/L (present as 2-ethyl hexyl ester).

**HERBICIDE GROUP:** Group 4.

**ADJUVANT:** None.
For broad-spectrum annual and perennial weed control in tree fruit, cane fruit, nurseries, cranberry, parks and shelterbelts. Casoron G4 is an easy-to-use granular herbicide eliminating the need for labour-intensive and costly hand weeding. The long lasting residual control offers the grower season-long weed management.

**CROPS:** Fruit trees and fruit tree nurseries, cranberries, highbush blueberries, raspberries, established Saskatoons, grapes, established woody ornamentals (see label for species) and shelterbelts with the following species:

Note: Only well established trees listed above should make up the shelterbelt, hedgerow etc.

Arborvitae  
Ash  
Barberry  
Birch (cut leaf, weeping)  
Boxwood  
Caragana  
Cedar (Eastern Red)  
Cedar (White)  
Crabapple  
Elm  
Euonymous  
Forsythia sp.  
Heather  
Holly*  
Honeysuckle  
Juniper  
Lilac  
Locust  
Maple  
Mock orange  
Poplars  
Rhododendron  
Rose  
Spirea  
Willow  
Yew (taxus)  

*Ilex spp. except I. crenata, I. rotunda, I. vomitoria

**TIMING:** Early spring or late fall before seeds and annual weeds germinate or after cultivation has removed established weeds. Do not apply until four weeks after transplanting. Avoid soil and air temperatures greater than 15°C.

**WEEDS CONTROLLED:**

* Controlled with the higher rates and late fall applications.

Annual bluegrass  
Artemisia*  
Bindweed*  
Bittercress  
Blue aster  
Bracken fern  
Canada thistle*  
Chickweed  
Crabgrass  
Dandelion*  
Foxtail  
Grasses (sedges and Juncus species)  
Kochia  
Kochia  
Lamb's-quarters  
Loosestrife  
Mustard  
Nutsedge*  
Pigweed  
Plantain  
Purslane  
Quackgrass*  
Sheep sorrel*  
Shepherd's-purse  
Smートweed  
Sow-thistle  
Spurge  
Vetch*  
Wild buckwheat*

**RE-CROPPING:** Do not plant vegetables or other sensitive crops the year following application.

**ACTIVE INGREDIENT:** Dichlobenil 4%.

**HERBICIDE GROUP:** Group 20 Herbicide; aromatic nitrile compound.

See the ease of application at www.uap.ca/casoron
Checkmate® MCPA Ester 600

Checkmate offers a cost-effective solution to broadleaf weeds including many herbicide-resistant weeds and volunteer broadleaf crops in cereal crops, pastures and non-crop areas. Checkmate offers strong broadleaf weed control alone or in a tank-mix maintaining excellent crop safety.

**CROPS:** Wheat, barley, oats, flax, rye, winter wheat, fall barley, established alfalfa, alsike and red clover, grasses, stubble land, pastures without legumes, roadsides, uncropped land, and woody growth.

**TIMING:** Wheat, barley and rye: apply in the expanded 3-leaf to early flag leaf stage.

Oats: apply in the 1-leaf to early flag leaf stage.

Flax: apply when flax is 5cm (2in) tall and before buds form.

Winter cereals: apply in tillering to shot blade stage.

Established forages: apply very early in the spring before forage growth has started.

Non-cropped areas: apply at time of rapid weed growth.

**WEEDS CONTROLLED:**

**Susceptible:**
- Burdock
- Cocklebur
- Common plantain
- Flixweed
- Lamb’s-quarters

**Harder to control:**
- Annual sow-thistle
- Biennial wormwood
- Blue lettuce
- Bluebur
- Canada thistle
- Corn spurry
- Curled dock
- Dog mustard
- Field bindweed
- Dandelion
- Field peppergrass

**TANK MIXES:**

**Herbicides:**
- Achieve® 80DG/Liquid
- Achieve® Extra Gold
- Ally®
- Assert®
- Avenge®
- Bromoxynil

**Insecticides:** Decis® and Lorsban™.

**RE-CROPPING:** Consult tank-mix partner label for restrictions.

**ACTIVE INGREDIENT:** MCPA, 600 g/L (present as 2-ethyl hexyl ester).

**HERBICIDE GROUP:** Group 4.

**ADJUVANT:** Not required.

Always read and follow label directions
Eptam® 8E

Eptam 8E herbicide provides proven season-long control of many difficult-to-control annual and perennial weeds including sedges, hairy nightshade and wild oats. When Eptam is applied and/or incorporated according to label directions, weed control begins immediately. Performance is not dependant on post-application rainfall. Other key Eptam features include excellent crop safety, crop rotation and tank-mix flexibility.

CROPS: Alfalfa, dry and snap bean, flax, sunflower, sugar beets, turnip and potato.

TIMING: Pre-plant or post-emergence (see specific crop sections of product label).

WEEDS CONTROLLED:

- Annual bluegrass and ryegrass
- Barnyardgrass
- Crabgrass
- Fall panicum
- Foxtails (green and yellow)
- Goosegrass
- Volunteer grains (barley, wheat, oats)
- Nettleleaf goosefoot
- Common chickweed
- Corn spurry
- Hairy nightshade
- Henbit (deadnettle)
- Lamb's-quarters
- Pigweed (prostrate, redroot, tumble)
- Purslane
- Wild oats
- Witchgrass

TANK MIXES: Edge®, Sencor®, Ro-Neet, Trifluralin.

APPLICATION CONSIDERATIONS:

- Eptam does not control established or germinated weeds.
- May be applied with water, liquid fertilizer, dry bulk fertilizer or through some irrigation systems.
- Eptam must be incorporated in the soil.
- Application rates and methods will vary as to target weeds, grasses, soil type, crop, etc.

ACTIVE INGREDIENT: EPTC, 800 g/L.

HERBICIDE GROUP: Group 8.
Fortress herbicide is a granular formulation for fall and spring treatment to control wild oats and wild millet (green and yellow foxtail) in spring and durum wheat, spring barley, rapeseed (including canola), flax (not including low linolenic acid varieties) and mustard. Fortress also provides suppression of several annual broadleaved weeds.

Fortress is an excellent resistance management tool. It is a combination of Group 8 (Triallate) and Group 3 (Triafluralin) herbicides and controls wild oats that have developed resistance to Group 1 and Group 2 post-emergence herbicides. Putting Fortress into rotation with post-emergence herbicides can lengthen the useful life of those herbicides.

**CROPS:** Spring and durum wheat, barley, rapeseed (including canola), flax (not including low linolenic acid varieties) and mustard.

**TIMING:**

**Fall Treatment (Incorporated)**
Fall applications of this product must be made after September 15 and until soil freeze-up. Applications made before September 15 may result in reduced effectiveness of the herbicide.

**Fall Treatment (Surface)**
Where fields are prone to water and/or wind erosion, and fall tillage is therefore undesirable, fall surface applications should be made when average soil temperature at the 5cm depth is 4°C or less and within three weeks of soil freeze-up. This situation generally occurs by October 1 across the Prairies.

**Spring Treatment**
This product can be applied before seeding labeled crops.

**WEEDS CONTROLLED:**
Wild oats, wild millet (green and yellow foxtail).

**WEEDS SUPPRESSED:**
Lamb's-quarter, kochia, redroot pigweed, Russian thistle and wild buckwheat.

**RE-CROPPING:** Do not apply Fortress herbicide for wheat on land which has been treated with Trifluralin since June 1 of the previous year.

**ACTIVE INGREDIENT:** Triallate 10%; Triafluralin 4%.

**HERBICIDE GROUP:** Group 8 and Group 3.
MCPA Amine 500

MCPA Amine is a cost-effective herbicide that controls a wide range of broadleaf weeds in pea, oat, flax, cereal grains, field corn, seedling and established grasses, and rangeland. It is useful for controlling weeds when establishing legumes that are undersown to small grains. MCPA Amine is an effective broadleaf herbicide for managing herbicide resistant weeds.

**CROPS:** Wheat, barley, oat, flax, pea, corn, rye, small grains undersown to legumes, established pastures, alfalfa stands, alsike and red clover, grasses, turf, and asparagus.

**TIMING:**

**Wheat, barley and oats:** apply in the expanded 3-leaf stage to the early flag leaf.

**Oats:** apply in emergence up to the flag leaf stage.

**Flax:** apply between 5cm tall to just before bud formation.

**Pea:** apply in 10 to 18cm tall.

**Corn:** apply up to 15 to 18cm tall.

**Undersown legumes:** apply at around the 2nd true leaf stage.

**Established forages:** apply in the fall after legume top growth has been killed by frost, or in the spring before legumes have started to grow.

**Turf:** apply after weeds have started to grow.

**Asparagus:** apply before first spears appear.

**WEEDS CONTROLLED:**

**Very susceptible:**

<table>
<thead>
<tr>
<th>Weed</th>
<th>Weed</th>
<th>Weed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ball mustard</td>
<td>Giant ragweed</td>
<td>Ragweed</td>
</tr>
<tr>
<td>Bird’s-rape</td>
<td>Hare’s-ear mustard</td>
<td>Stinkweed</td>
</tr>
<tr>
<td>Common ragweed</td>
<td>Indian mustard</td>
<td>Sunflower</td>
</tr>
<tr>
<td>Creeping buttercup</td>
<td>Kochia</td>
<td>Tumbling mustard</td>
</tr>
<tr>
<td>False ragweed</td>
<td>Lamb’s quarters</td>
<td>Vetch</td>
</tr>
<tr>
<td>Field horsetail</td>
<td>Mustards</td>
<td>Wormseed mustard</td>
</tr>
<tr>
<td>Flixweed</td>
<td>Prickly (lobed) lettuce</td>
<td></td>
</tr>
</tbody>
</table>

**Moderately susceptible:**

<table>
<thead>
<tr>
<th>Weed</th>
<th>Weed</th>
<th>Weed</th>
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</thead>
<tbody>
<tr>
<td>Burdock</td>
<td>Dandelion (lawns)</td>
<td>Thyme-leaved spurge</td>
</tr>
<tr>
<td>Cocklebur</td>
<td>Russian pigweed</td>
<td>Wild radish</td>
</tr>
<tr>
<td>Common plantain</td>
<td>Shepherd’s-purse</td>
<td></td>
</tr>
</tbody>
</table>
Harder to control:
Alfalfa Field peppergrass Purslane
American dragonhead Goosefoot Redroot pigweed
Annual sow-thistle Hairy galinsoga Smartweeds
Bluebur Lady’s-thumb Stinging nettle
Buttercup Oak-leaved goosefoot Sweet-clover
Chickweed Peppergrass Sweet-gum
Curled dock Pineappleweed Tansy mustard
Dog mustard Prairie sunflower Tartary buckwheat
False flax Prostrate amaranth Tumble pigweed

Perennial and top-growth control:
Biennial wormwood Gumweed Russian knapweed
Blue lettuce Hedge bindweed Tall buttercup
Canada thistle Hemp nettle Toadflax
Corn spurry Hoary cress Tumbleweed
Dandelion (fields) Horsetail Wild buckwheat
Docks Leafy spurge Wild carrot
Field bindweed Perennial sow-thistle
Goat’s-beard Russian thistle

TANK MIXES:
Herbicides:
Ally® Express® Pak/Express® Lontrel™
Avenge® TNG Mecoprop-P
Banvel® II Fusion® Puma® Super
Bromoxynil Glyphosate Refine Extra® TNG
Dicamba Horizon® Sencor®
Everest® Linuron

Insecticides: Decis® and Lorsban™.

Fungicides: Bumper® and Tilt®.

RE-CROPPING: No restrictions the year following application.

ACTIVE INGREDIENT: MCPA Amine formulated as 500 g/L.

HERBICIDE GROUP: Group 4.

ADJUVANT: Not required.
Oracle® Dicamba

Oracle dicamba herbicide controls tough broadleaf weeds in a wide range of crops including cereals, corn, red fescue, canary grass, grasses and low bush blueberries. It also provides excellent annual and perennial broadleaf weed control in non-crop applications as well as brush control on pasture. Oracle is especially effective when targeting Canada thistle and perennial sow-thistle.

CROPS: For use on spring and winter wheat, barley, oats, canary seed, spring rye, field corn, red fescue, pastures and many seedling grasses. Also registered for weed control on fall stubble, pre-seeding with cereals and for chemfallow. May also be used in non-crop areas such as right of ways, roadsides, power lines, pipe lines and railway right of ways as well as on established turf.

TIMING:
**Spring wheat and barley:** apply in the 2 to 3-leaf stage.
**Winter wheat:** apply in the spring when crop is 15 to 25cm (6 to 10in) tall prior to the flag leaf stage.
**Spring rye:** apply in the 2 to 3-leaf stage.
**Oats:** apply in the 2 to 5-leaf stage.
**Canary grass:** apply in the 3 to 5-leaf stage.
**Field corn:** broadcast spray when corn is up to 20cm (8in) tall. When corn is taller, use drop nozzles. Do not apply to corn over 50cm (20in) and no later than two weeks prior to tassel emergence.
**Pre-seed:** apply according to weed stage.
**Summerfallow:** apply according to weed stage.
**Red fescue:** apply to seedling crop when 5cm (2in) tall. Established red fescue up to the flag leaf stage.
**Seedling grasses:** apply in the 2 to 4-leaf stage.
**Established grasses:** apply according to weed stage.
**Low-bush blueberries:** apply in the fall after the blueberries have dropped 90% of their leaves and sweet fern weed is still moderately green.
**Established turf:** apply in the early spring or fall, two weeks prior to frost.

WEEDS CONTROLLED:
- Canada thistle
- Cleavers
- Clover
- Common ragweed
- Corn spurry
- Cow cockle
- Curled dock
- Dandelion
- English daisy
- Field bindweed
- Giant ragweed
- Goats’ beard
- Goldenrod
- Green smartweed
- Ground cherry
- Hare’s ear mustard
- Indian mustard
- Lady’s thumb
- Lamb’s quarters
- Pasture sage
- Perennial sow-thistle
- Plantain
- Poverty weed
- Redroot pigweed
- Russian pigweed
- Sheep sorrel
- Shepherd’s purse
- Tansy ragwort
- Tartary buckwheat
- Thyme-leaved spurge
- Tumble mustard
- Velvetleaf
- Wild buckwheat
- Wild mustard
- Wormseed mustard

Oracle can also be used for brush weed control on pastures, rangeland and non-crop areas. Consult label for complete listing of brush and tree species.

Always read and follow label directions
TANK MIXES:

Spring wheat and barley: 2,4-D amine, MCPA amine, MCPA K, Sencor 500®, Lexone DF® or Ally®.

Winter wheat: 2,4-D amine, MCPA amine, MCPA K.

Spring rye: 2,4-D amine.

Oats: MCPA amine or MCPA K.

Canary grass: MCPA amine.

Field corn (Eastern Canada only): Dual®, Dual II®, Frontier®, Primextra Light®, Atrazine® 480, Prowl® 400, Elim® EP, or Atrazine 480® plus Dual II.

Pre-seed: Roundup®

Summerfallow: 2,4-D amine, 2,4-D ester, or Roundup.

Red fescue: 2,4-D amine.

Seedling grasses: 2,4-D amine, MCPA amine or MCPA K.

Established grasses: 2,4-D amine.

Low-bush blueberries: 2,4-D ester.

Established turf: 2,4-D amine or 2,4-D L.V. ester.

Oracle is generally compatible with pre-emergent applications with liquid nitrogen blends. Always conduct a compatibility test prior to use.

RE-CROPPING: Grow only cereals, corn, soybean or white bean the year after treatment with the 1.0 L/acre rate. Grow only cereals, corn, field bean or canola the year after application of the 0.5 L/acre rate. If application is made after September 1 or if dry weather persists after application, crop injury may occur the following spring.

ACTIVE INGREDIENT: 480 g/L dicamba.

HERBICIDE GROUP: Group 4.

ADJUVANT: None, except if required by tank-mix partner; follow the tank-mix partner’s label.
CROPS: Par III, the most trusted name in golf course and turf management, is a broad-spectrum herbicide specially formulated to control hard-to-kill annual and perennial weeds in turfgrass. Par III is ideal for golf courses, parks, lawns, sports fields and other turf applications where weeds cause aesthetic and durability problems. Used in a twice-yearly maintenance program, Par III keeps turfgrass free of tough problem weeds such as dandelion, poison ivy, clovers and ground ivy.

TIMING: Par III can be applied to established turf at any time during the growing season when weeds are young and actively growing. Apply in good growing conditions before turf canopy shields the weeds. Do not apply to newly established turf until after the second or third mowing. If used prior to seeding as a pre-seed weed control, grass can be sown one to two weeks after application.

WEEDS CONTROLLED:

Bedstraw
Black medick (yellow clover)
Buttercup
Chickweed
Clover
Dandelion
English daisy
Ground ivy (creeping Charlie)

Heal-all
Knotweed (ironweed)
Orange hawkweed
(devil’s paint brush)
Plantain
Poison ivy
Ragweed
Shepherd’s-purse

TANK MIXES: Par III is compatible with several liquid fertilizers (including Green with Envy). Always conduct a compatibility test (jar test) prior to mixing any liquid fertilizer with Par III.

RE-CROPPING: No soil residual activity on weeds.

ACTIVE INGREDIENT:
Mecoprop-P (100 g/L);
2,4-D (190 g/L);
Dicamba (18 g/L)
(all present as dimethylamines).

HERBICIDE GROUP: Group 4.

ADJUVANT: Valid for drift control.
Salvo® 2,4-D Ester 700

Salvo is a cost-effective herbicide that controls a wide range of broadleaf weeds in most cereal grains, corn, seedling and established grasses, forage grasses, rangeland and spring and fall burndown applications. Salvo provides effective control of volunteer herbicide-tolerant canola and Group 2 and Group 3 herbicide-resistant weeds. As a Group 4 herbicide, Salvo is an effective broadleaf herbicide for managing herbicide resistant weeds.

CROPS: Wheat, winter wheat, barley, spring and fall rye, field corn, established grasses for seed or forage production, established pastures and rangeland without legumes, turf, uncropped land, woody growth in non-grazed areas, and basal bark and stump treatment.

TIMING:
Spring cereals: apply in the 4-leaf to early flag leaf stage.
Winter cereals: apply in the spring between full tillering and shot blade stage.
Field corn: apply before the corn is 15cm tall and/or before the 6-leaf stage.
Established grasses: apply in the spring up to shot blade stage or in the fall after harvest.
Pastures, rangeland, turf, non-cropped lands and woody areas: apply during rapid weed growth.

WEEDS CONTROLLED:
Easy to control:
Annual sow-thistle          Kochia                  Prickly lettuce
Bluebur                     Lamb's-quarters          Ragweeds
Burdock                     (including triazine    (common and giant)
                           resistant types)
Cocklebur                   Mustards (except    Redroot pigweed
                           dog and tansy)
Daisy fleabane              Narrow-leaved           Russian pigweed
False flax                  hawk's beard            Russian thistle
False ragweed               Plantain                 Shepherd's-purse
Flixweed                    Plantain                 Stinging nettle
Goat's-beard                Prickly lettuce

Harder to control:
Curled dock                 Heal-all                  Pineappleweed
Dog and tansy              Knotweed                 Prostrate pigweed
mustard                    Narrow-leaved            Purslane
Flixweed                   hawk's beard            Sheep sorrel
Groundsel                  Oak-leaved               Tumble pigweed
Hairy galinsoga             goosefoot                Velvetleaf
Hawkweed                   Peppergrass

NOW IN 500L REPEATER

Always read and follow label directions
**Top-growth control:**

Biennial wormwood  Field chickweed  Perennial sow-thistle
Blue Lettuce  Gumweed  Russian knapweed
Bull thistle  Hedge bindweed  Scentless mayweed
Burdock  Hemp-nettle  Smartweed
Buttercup  Hoary cress  Tartary buckwheat
Canada thistle  Horsetail  Teasel
Chicory  Lady’s-thumb  Volunteer flax
Curled Dock  Leafy spurge  Volunteer sunflower
Dandelion  Mouse-eared  Wild buckwheat
Field bindweed  chickweed  Yellow rocket

**TANK MIXES:**

**Herbicides:**

Achieve® 80 DG/Liquid  Bromoxynil  Lontrel™
Ally®  Escort®  Puma® Super
Assert®  Everest®  Refine Extra®
Avenge®  Express® DF  Sundance™
Basagran®  Glyphosate

**Insecticides:**

Decis® and Lorsban™

**RE-CROPPING:** No restrictions the year after treatment. When used as a fall stubble treatment for winter annual control, higher rates may affect germination of sensitive pulse crops the following spring.

**ACTIVE INGREDIENT:** 2,4-D, 660 g/L (present as 2-ethyl hexyl ester).

**HERBICIDE GROUP:** Group 4.

**ADJUVANT:** Not required.
Sharpshooter® Plus herbicide is a cost-effective, glyphosate herbicide in an easy-to-use, water-soluble formulation. Sharpshooter Plus delivers the proven performance of glyphosate in a wide range of cropping and non-cropping uses.* Sharpshooter Plus is UAP’s foundation for use on glyphosate tolerant crops with the Round Up Ready gene, while Sharpshooter is available for those growers who require glyphosate on non-glyphosate tolerant crops without the Round Up Ready gene.

CROPS and TIMING:

**Pre-seed burndown:** Prior to the seeding of all crops for control of emerged weeds listed on the label. Ensure weeds are at the recommended growth stage at the time of application. Apply BEFORE seeding or transplanting crop.

**Summerfallow:** Apply on summerfallow when weeds are at the recommended growth stage and actively growing at the time of application.

**Glyphosate-tolerant crops:** Apply on glyphosate-tolerant canola, soybean, and corn varieties only (i.e., varieties with the Roundup Ready gene).

**Fall stubble:** Apply in the fall as a post-harvest stubble treatment for control of perennial weeds including quackgrass and Canada thistle.

**Pasture renovation:** Use to control or suppress existing vegetation for zero-tillage seeding of legume or grass pasture mix into established sod for renovation. Weed growth should be at least 20cm high and most weed seeds should have germinated at the time of spraying.

**Pre-harvest control of perennial weeds:** Apply prior to harvest of wheat, barley (including malting barley), oats, canola (rapeseed, including glyphosate tolerant varieties), flax (including low-linolenic acid varieties), lentil, pea, dry bean and soybean, and when crops are less than 30% seed moisture content.

**Tree, vine, and berry crops:** Controls annual and perennial weeds in established vineyards or orchards, in blueberry, cranberry, strawberry and sugar beets (avoid spray drift onto established tree, vine and berry crops), or for site preparation prior to transplanting tree or vine crops.

*Refer to label for specific application instructions.

**NOW IN 750L REPEATER**

Always read and follow label directions
**WEEDS CONTROLLED:**

**Annual weeds:** Grassy and broadleaf weeds that are actively growing.

**Perennial weeds:** Canada thistle, dandelion, field bindweed, milkweed, quackgrass, and many other actively growing perennials.

**TANK MIXES:**

**LI 700:** for improved control and drift management.

**Annual weed control in minimum tillage systems:**
Pardner® (barley, oats and wheat).

**Summerfallow:** Banvel®, Oracle®, Pardner® and 2,4-D ester or amine.

**Glyphosate-tolerant canola:** Lontrel™ 360.

**Glyphosate-tolerant soybean:** Pursuit® or Assure® II.

**Glyphosate-tolerant corn:** Atrazine or Marksman®.

**RE-CROPPING:** Do not graze or harvest treated areas until plants have turned brown and started to deteriorate.

**ACTIVE INGREDIENT:** Glyphosate 360 g/L (acid equivalent) present as the isopropylamine salt.

**HERBICIDE GROUP:** Group 9.

**ADJUVANT:** Sharpshooter Plus herbicide may be used with the following surfactants: LI 700, Agral 90®, AgSurf®, Companion™, or Frigate®.
Sword®

Sword cuts down wild buckwheat, Canada thistle and a wide range of broadleaf weeds. Sword adds value to your bottom line by controlling weeds for less-than-new generation specialty herbicides.

**CROPS:** Barley, canary seed, durum wheat, oats, summerfallow, wheat, winter wheat, and seedling and established grasses grown for forage (not underseeded to legumes).

**TIMING:**
- **Barley:** apply in the 2 to 4-leaf.
- **Wheat** (spring, durum), oats, canary seed: apply in the 2 to 5-leaf stage.
- **Winter wheat:** apply in the spring before the crop is more than 30cm high (top leaf extended).

**WEEDS CONTROLLED:**
- Buckwheat (wild, tartary, volunteer cultivated)
- Cleavers*
- Common ragweed
- Corn spurry
- Cow cockle
- Flixweed
- Green smartweed
- Hemp-nettle**
- Knotweed
- Lady’s-thumb
- Lamb’s-quarters
- Mustard (wild, ball, yellow)
- Night flowering catchfly
- Pigweed (prostrate, redroot)
- Kochia
- Russian thistle,***
- Shepherd’s-purse
- Annual sow-thistle
- Volunteer rapeseed
- Stinkweed
- Volunteer sunflower
- Also chickweed, wild oats, and millet

Top growth control only:
Canada thistle, Hedge bindweed, Field bindweed, Perennial sow-thistle

**TANK MIXES:** Horizon®, Everest®, (wheat only). For other tank mixes see label.

**RE-CROPING:** No restrictions the year after application.

**ACTIVE INGREDIENT:** Formulated as 275 g/L MCPA + 62.5 g/L Mecoprop-P + 62.5 g/L dicamba. (all present as dimethylamine salts)

**HERBICIDE GROUP:** Group 4.

**ADJUVANT:** None, except if required by tank-mix partner; follow the tank-mix partner’s label.

**NOW IN 500L REPEATER**

Always read and follow label directions
Thrasher® herbicide delivers broad-spectrum control of many broadleaf weeds, including kochia, cow cockle, wild buckwheat, and mustards. With a combination of Group 4 and Group 6 active ingredients, alone or with one of several tank-mix options for grassy weeds, Thrasher is a valuable herbicide for solid weed control and herbicide resistance management.

**CROPS:** Spring wheat and barley, not underseeded to legumes.

**TIMING:** Spring wheat, durum wheat and barley may be treated in the 4-leaf stage until the early flag leaf stage. Application before the 4-leaf stage may injure the crop. For best results spray when weeds are in the seedling stage.

**WEEDS CONTROLLED:**

| American nightshade                     | Night-flowering catchfly |
| Ball mustard                            | Pale smartweed           |
| Bluebur                                 | Redroot pigweed          |
| Cocklebur                               | Russian thistle          |
| Common buckwheat                        | Shepherd’s-purse         |
| Common groundsel                        | Stinkweed                |
| Common ragweed                          | Tarnary buckwheat        |
| Cow cockle                              | Triazine resistant pigweed |
| Flixweed                                | Velvetleaf               |
| Green smartweed                         | Volunteer canola         |
| Kochia                                  | Volunteer sunflower      |
| Lady’s-thumb                            | Wild buckwheat           |
| Lamb’s-quarters                         | Wild mustard             |

**TANK MIXES:** For grassy weed control, Achieve® liquid, Avenge® 200-C, Everest® 70DF, Horizon®, and Puma® Super.

**RE-CROPPING:** No re-cropping restrictions the year after application.

**ACTIVE INGREDIENT:**

Bromoxynil present as octanoate ester 225g/L; 2,4-D present as 2 ethylhexyl ester 225 g/L

**HERBICIDE GROUP:** Groups 4 and 6.

**ADJUVANT:** None, except if required by tank-mix partner; follow the tank-mix partner’s label.

**NOW IN 500L REPEATER**

Always read and follow label directions.
Topside®

Topside is a broad-spectrum herbicide for use in seedling clovers, seedling grasses, cereals, pea, corn and pasture. It is effective on a wide range of annual and perennial weeds and is ideal for weed control in seedling forages.

CROPS: Wheat, oats, barley, rye, corn, pea, seedling clovers, and the following seedling grasses: smooth brome grass, meadow brome grass, creeping red fescue, reed canary grass, altai fescue, meadow fescue, tall fescue, altai wild ryegrass, Russian wild ryegrass, timothy, crested wheatgrass, intermediate wheatgrass, pubescent wheatgrass, tall wheatgrass, slender wheatgrass, streambank wheatgrass, northern wheatgrass, western wheatgrass, green needlegrass and established pasture.

TIMING:
Cereals and seedling grasses: apply in the 2 to 4-leaf stage.
Clover: apply in the spade-leaf stage to 4th true leaf.
Corn: apply when 30 to 60cm high but before tasselling, drop nozzles should be used.
Pea: apply in the 3 to 6 expanded leaf stage.

WEEDS CONTROLLED:

Annuals:
- Annual sow-thistle
- Ball mustard
- Hemp nettle
- Lamb’s-quarters
- Ragweed
- Redroot pigweed

Perennials:
- Bull thistle
- Canada thistle*
- Creeping buttercup*
- Curled dock
- Field bindweed*
- Horsetail*
- Perennial sow-thistle*
- Plantain
- Tall buttercup*

TANK MIXES: None.

RE-CROPPING: No restrictions.

ACTIVE INGREDIENT: MCPB (present as Sodium salt) 375 g/L, MCPA (present as Sodium salt) 25 g/L.

HERBICIDE GROUP: Group 4.

ADJUVANT: None.

*Top growth controlled

Always read and follow label directions
Turboprop®

Turboprop is a broad-spectrum herbicide for the control of broadleaf weeds in barley, durum wheat, wheat and winter wheat. Turboprop can be tank-mixed with most grass herbicides registered for wheat and barley. Turboprop provides stronger top growth control of tough to control annuals and perennials while still having enough recovery for a pre or post-harvest treatment.

CROPS: Barley, durum wheat, wheat, winter wheat and non-crop areas.

TIMING:
Wheat and barley: apply between the 4-leaf and early flag leaf stage (shot blade).
Winter wheat: apply in early spring between full tillering and shot blade stage.

WEEDS CONTROLLED:
- Ball mustard
- Bluebur
- Burdock
- Canada thistle
- Cocklebur
- Curled dock
- Dog mustard
- Flixweed
- Hare’s-ear mustard
- Indian mustard
- Kochia
- Lady’s-thumb
- Lamb’s-quarters
- Night flowering catchfly
- Oak-leaved goosefoot
- Pigweed
- Ragweed
- Redroot pigweed
- Round leaved mallow
- Russian thistle
- Shepherd’s-purse
- Smartweeds
- Annual sow-thistle
- Perennial sow-thistle
- Stinkweed
- Stork’s-bill
- Tartary buckwheat
- Toadflax
- Tumble mustard
- Volunteer canola
- Volunteer sunflower
- Wild buckwheat
- Wild mustard
- Wormseed mustard

TANK MIXES: Achieve® 80DG, Horizon®, Assert®, Everest®, Avenge®, Puma® Super and most Nortrace® plant nutrients.

RE-CROPPING: No restrictions the year following application.

ACTIVE INGREDIENT: 300 g/L Dichlorprop and 282 g/L 2,4-D (all present as 2-ethyl hexyl esters).

HERBICIDE GROUP: Group 4.

ADJUVANT: None, except if required by tank-mix partner; follow the tank-mix partner’s label.

Always read and follow label directions.
2,4-D Amine 600

2,4-D Amine is a cost-effective broadleaf herbicide for use in some cereal grains, field corn, seedling and established grasses, forage grasses and rangeland. 2,4-D Amine provides effective control of volunteer herbicide-tolerant canola and Group 2 and Group 3 herbicide-resistant weeds. As a Group 4 herbicide, 2,4-D Amine is an effective broadleaf herbicide for managing herbicide resistant weeds.

**CROPS:** Wheat, barley, rye, field corn, fall rye, winter wheat, seedling grasses for seed and forage production, established grasses for seed and forage, established pastures and rangeland (without legumes), turf, stubble land, roadsides and uncropped land.

**TIMING:**
- **Wheat, barley and spring rye:** apply in the 4-leaf to early flag leaf stage (shot blade).
- **Winter cereals:** apply in spring between full tillering to just before the flag leaf stage.
- **Corn:** apply when corn is 15cm tall (leaf extended) and before the 6-leaf stage.
- **Seedling grasses:** apply in the 3-leaf to just before the shot blade stage.
- **Established grasses:** apply in the spring up to the shot blade stage or in the fall after harvest.
- **Established pastures, rangeland, turf and non-cropped areas:** apply at time of rapid weed growth.

**WEEDS CONTROLLED:**

<table>
<thead>
<tr>
<th>Easy to control:</th>
<th>Lamb’s-quarters</th>
<th>Russian pigweed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bluebur</td>
<td>(including triazine resistant types)</td>
<td>Russian thistle</td>
</tr>
<tr>
<td>Burdock</td>
<td>Russian thistle</td>
<td>Shepherd’s-purse</td>
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<tr>
<td>Cocklebur</td>
<td>Russian thistle</td>
<td>Stinging nettle</td>
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<tr>
<td>Common plantain</td>
<td>Russian thistle</td>
<td>Stinkweed</td>
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<tr>
<td>Daisy fleabane</td>
<td>Russian thistle</td>
<td>Sweet clover</td>
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<tr>
<td>False flax</td>
<td>Russian thistle</td>
<td>Thyme-leaved</td>
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<tr>
<td>False ragweed</td>
<td>Russian thistle</td>
<td>Spurge</td>
</tr>
<tr>
<td>Flixweed</td>
<td>Russian thistle</td>
<td>Wild radish</td>
</tr>
<tr>
<td>Goat’s-beard</td>
<td>Russian thistle</td>
<td>Wild (prairie)</td>
</tr>
<tr>
<td>Kochia</td>
<td>Russian thistle</td>
<td>Sunflower</td>
</tr>
</tbody>
</table>

Always read and follow label directions.
### Harder to control:
- Annual sow-thistle
- Hairy galinsoga
- Biennial wormwood
- Common chickweed
- Common purslane
- Curled dock
- Dandelion in lawns
- Dog and tansy mustard
- Oak-leaved goosefoot
- Groundsel
- Gumweed
- Russian knapweed
- Heal-all
- Hedge bindweed
- Knotweed
- Leafy spurge
- Lady’s-thumb
- Peppergrass
- Pineappleweed
- Volunteer canola
- Velvet leaf
- Wild buckwheat
- Yellow rocket

### Top growth control only:
- Biennial wormwood
- Blue lettuce
- Bull thistle
- Burdock
- Buttercup
- Canada thistle
- Field bindweed
- Field dandelion
- Gumweed
- Hedge bindweed
- Hoary cress
- Leafy spurge
- Mouse-eared chickweed
- Perennial sow-thistle
- Russian knapweed
- Tartary buckwheat
- Teasel
- Volunteer sunflower
- Wild buckwheat
- Yellow rocket

### TANK MIXES:
**Herbicides:**
- Ally®
- Banvel® II
- Basagran®
- Bromoxynil
- Escort®
- Everest®
- glyphosate
- Horizon®
- Lontrel™
- Refine®
- Sencor

**Insecticides:** Decis® and Lorsban™.

**Fungicides:** Bumper® and Tilt®.

**RE-CROPPING:** No restrictions the year after treatment. When used as a fall stubble treatment for winter annual control, higher rates may affect germination of sensitive pulse crops the following spring.

**ACTIVE INGREDIENT:** 564 g/L 2,4-D, present as dimethylamine

**HERBICIDE GROUP:** Group 4.

**ADJUVANT:** Not required.
Rotate to manage resistance

Rotating crop protection products is a key practice to prevent the build-up of weed, insect or disease resistance. Different products have different risks for developing resistance, and scientists recommend using high-risk products more sparingly. Group 1 and 2 herbicides have a high risk for the development of herbicide resistant populations, and may develop resistance more quickly with as little as 10 or fewer applications. UAP reminds farmers to rotate their crop protection products to ensure they continue to be effective.

UAP Canada markets over 100 other fungicide, insecticide and herbicide products. Choose from adjuvants like LI 700, herbicides like Sword®, Oracle®, and Turboprop®, insecticides like Rimon®, Lagon® and Pounce®, or fungicides like Serenade®, Gavel® and Potato ST 16%.

Look to UAP to deliver flexibility, freedom and choice in your crop protection decisions.

Call your nearest crop input dealer today for UAP products. Always read and follow label directions.

www.uap.ca
Western Canada: 1-800-561-5444
Ontario & the Maritimes: 1-800-265-5444
Quebec: 1-800-361-9369

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