

2020-4688  
2020-11-18

(Container)

# Cavalier

GROUP	4	HERBICIDE
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Cavalier is a selective herbicide for postemergent control of annual broadleaved weeds including cleavers and certain ALS-resistant broadleaved weeds such as kochia in spring wheat, durum wheat, winter wheat, spring barley, oats, rangeland, permanent pasture, rights-of-way, industrial and other non-crop areas of Canada. Cavalier will also suppress hemp-nettle, common chickweed and wild buckwheat.

COMMERCIAL

READ THE LABEL AND ATTACHED BOOKLET BEFORE USING  
KEEP OUT OF REACH OF CHILDREN

ACTIVE INGREDIENT: fluroxypyr (present as 1-methylheptyl ester) ... 333 g a.e./L

Emulsifiable concentrate

REGISTRATION NO. 33933 PEST CONTROL PRODUCTS ACT

**WARNING**  
**EYE AND SKIN IRRITANT**  
**POTENTIAL SKIN SENSITIZER**

NET CONTENTS: 1 L – 1050 L

Winfield United Canada, ULC  
101-302 Wellman Lane  
Saskatoon, SK S7T-0J1  
1-888-975-4769

## **PRECAUTIONS**

### **KEEP OUT OF REACH OF CHILDREN**

Causes eye irritation. DO NOT get in eyes. May irritate the skin. Avoid contact with skin. Potential skin sensitizer.

**For agricultural/crop scenarios:** DO NOT enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12-hours. **For non-crop areas:** DO NOT enter or allow worker entry into treated areas until sprays have dried.

DO NOT use in residential areas. Residential areas are defined as any use site where bystanders, including children, could be exposed during or after application. This includes homes, schools, parks, playgrounds, playing fields, public buildings, or any other area where the general public, including children, could be exposed.

Apply only when the potential for drift to areas of human habitation or areas of human activity such as houses, cottages, schools and recreational areas is minimal. Take into consideration wind speed, wind direction, temperature inversions, application equipment and sprayer settings.

### **PROTECTIVE CLOTHING AND EQUIPMENT**

Wear a hat, coveralls over a long-sleeved shirt and long pants, socks, rubber boots or work boots and chemical-resistant gloves during spraying or application. In addition, wear goggles or face shield during mixing, loading, repair and clean-up or when handling the concentrate. Applicators using a closed cab are not required to wear chemical-resistant gloves.

Wear freshly laundered clothing and clean protective equipment daily. At completion of spraying or end of the day take a shower immediately. Wash thoroughly with soap and water before eating, drinking, smoking or using the toilet. Remove contaminated clothing at the end of the work session and store and wash separately from household laundry using detergents and hot water before reuse. If herbicide penetrates clothing, remove immediately; then wash thoroughly and put on clean clothing. Throw away clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Avoid contact with eyes, skin and clothing. Avoid breathing spray mist.

### **PHYSICAL OR CHEMICAL HAZARDS**

**COMBUSTIBLE.** Do not use or store near heat or open flame.

### **FIRST AID**

**Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.**

**If swallowed:** Call a poison control centre or doctor immediately for treatment advice. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

**If on skin or clothing:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice.

**If inhaled:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice.

**If in eyes:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.

### **TOXICOLOGICAL INFORMATION**

This product contains a petroleum distillate. Vomiting may cause aspiration pneumonia. The decision of whether to induce vomiting or not should be made by the attending physician. If lavage is performed, suggest endotracheal and/or oesophageal control. Danger from lung aspiration of petroleum based solvents must be weighed against toxicity when considering emptying the stomach. No specific antidote. Employ supportive care. Treatment should be based on the judgment of the physician in response to

reactions of the patient.

### **AGRICULTURAL CHEMICAL**

Do not ship or store with food, feeds, drugs or clothing.

### **ENVIRONMENTAL PRECAUTIONS**

TOXIC to non-target terrestrial plants and aquatic organisms. Observe buffer zones specified under DIRECTIONS FOR USE. To reduce runoff from treated areas into aquatic habitats avoid application to areas with a moderate to steep slope, compacted soil, or clay. Avoid application when heavy rain is forecast. Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative strip between the treated area and the edge of the water body. This product contains an active ingredient and aromatic petroleum distillates which are toxic to aquatic organisms.

### **STORAGE**

Store in original containers in a secure, dry heated storage. If product is frozen, bring to room temperature and agitate before use. Do not allow contamination of seeds, plants, fertilizers or other pesticides. If containers are damaged or spill occurs, use the product immediately or contain the spill with absorbent materials and dispose of waste. To prevent contamination, store this product away from food or feed.

### **DISPOSAL**

#### **Recyclable Containers:**

Do not reuse this container for any purpose. This is a recyclable container, and is to be disposed of at a container collection site. Contact your local distributor/dealer or municipality for the location of the nearest collection site. Before taking the container to the collection site:

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Make the empty, rinsed container unsuitable for further use.

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#### **Refillable Containers:**

For disposal, this container may be returned to the point of purchase (distributor/dealer). It must be refilled by the distributor/dealer with the same product. Do not reuse this container for any other purpose.

For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

### **NOTICE TO USER**

This pest control product is to be used only in accordance with the directions on the label. It is an offence under the *Pest Control Products Act* to use this product in a way that is inconsistent with the directions on the label.

(Booklet)

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### **GENERAL INFORMATION**

Cavalier is a selective postemergent herbicide for the control of annual broadleaved weeds in spring wheat, durum wheat, winter wheat, spring barley and oats, not underseeded with legumes. Cavalier offers a novel mode of action for controlling hard-to-kill annual broadleaved weeds such as kochia (including ALS resistant biotypes) and cleavers. Cavalier will also provide suppression of hempnettle, wild buckwheat and chickweed.

### **MODE OF ACTION**

Cavalier is a systemic auxin-type herbicide and moves within the plant for control of exposed and underground plant tissues. The product controls weeds by disrupting normal plant growth patterns. Symptoms of weeds include epinasty (twisting of the stems) and swollen nodes.

## **GENERAL USE PRECAUTIONS**

### **Sensitive Plants**

Do not apply Cavalier directly to, or otherwise permit it to come in direct contact with susceptible crops or desirable plants including alfalfa, edible beans, canola, flowers and ornamentals, lentils, lettuce, peas, potatoes, radishes, soybeans, sugar beets, sunflowers, tomatoes or tobacco.

### **Non-Target Sites**

Do not apply where proximity of susceptible crops or other desirable plants is likely to result in exposure to spray or spray drift. See ENVIRONMENTAL PRECAUTIONS section of the label.

### **Crop Rotation**

Fields previously treated with Cavalier can be seeded the following year to alfalfa, barley, canola, corn, dry beans, flax, forage grasses, lentils, mustard, oats, peas, potatoes, rye, soybeans, sugar beets, sunflowers or wheat or fields can be summerfallowed.

### **Tank Mixtures**

In some cases, tank mixing a pest control product with another pest control product or a fertilizer can result in biological effects that could include, but are not limited to: reduced pest efficacy or increased host crop injury. The user should contact Winfield United Canada, ULC at 1-888-975-4769 for information before mixing any pesticide or fertilizer that is not specifically recommended on this label.

### **Spray Equipment Precaution**

Do not apply through any type of irrigation system.

### **To Reduce Spray Drift**

- Use nozzles delivering higher volumes and coarser droplets.
- Use low pressures (200 to 275 kPa).
- Spot treatments should only be applied with a calibrated boom to prevent over-application.

### **Equipment Clean-Up**

Equipment used to apply Cavalier should not be used to apply other pesticides to sensitive crops without thorough cleaning. Contact your Cavalier dealer for detailed equipment cleaning procedures.

## **DIRECTIONS FOR USE**

Read the entire label before use. Failure to follow label instructions may result in erratic weed control or crop damage. Do not apply to crops underseeded with legumes.

As this product is not registered for the control of pests in aquatic systems, DO NOT use to control aquatic pests. DO NOT contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.

Field sprayer application: DO NOT apply during periods of dead calm. Avoid application of this product when winds are gusty. DO NOT apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE S572.1) medium classification. Boom height must be 60 cm or less above the crop or ground.

Aerial application: DO NOT apply during periods of dead calm. Avoid application of this product when winds are gusty. DO NOT apply when wind speed is greater than 16 km/h at flying height at the site of application. DO NOT apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE S572.1) medium classification. To reduce drift caused by turbulent wingtip vortices, the nozzle distribution along the spray boom length MUST NOT exceed 65% of the wing- or rotorspan.

### **Buffer zones:**

Spot treatments using hand-held equipment do not require a buffer zone.

For application to rights-of-way, buffer zones for protection of sensitive terrestrial habitats are not required; however, the best available application strategies that minimize off-site drift, including meteorological conditions (for example, wind direction, low wind speed) and spray equipment (for example, coarse droplet sizes, minimizing height above canopy), should be used. However, applicators must observe the specified buffer zones for protection of sensitive aquatic habitats.

The buffer zones specified in the table below are required between the point of direct application and the closest downwind edge of sensitive terrestrial habitats (such as grasslands, forested areas, shelter belts, woodlots, hedgerows, riparian areas and shrublands), sensitive freshwater habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands) and estuarine/marine habitats.

Method of Application	Crop	Buffer Zones (metres) Required for the Protection of:					
		Freshwater Habitat of Depths:		Estuarine Marine Habitats of Depths:		Terrestrial habitat	
		Less than 1 m	Greater than 1 m	Less than 1 m	Greater than 1 m		
Field Sprayer	Spring wheat, durum wheat, winter wheat, spring barley, oats	1	0	1	1	3	
	Permanent pasture, rangeland, industrial areas, other non-crop areas	1	1	1	1	5*	
Aerial	Wheat, barley, oats,	Fixed wing	5	0	1	1	95
		Rotary wing	3	0	1	1	80

\* Buffer zones for the protection of terrestrial habitats are not required for use on right-of-way including railroad ballast, rail and hydro rights-of-way, utility easements, roads, and training grounds and firing ranges on military bases.

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

The buffer zones for this product can be modified based on weather conditions and spray equipment configuration by accessing the Buffer Zone Calculator on the Pesticides portion of the Canada.ca website.

### Crops Registered

spring wheat, durum wheat, winter wheat, spring barley, oats

### CAVALIER ALONE

Apply Cavalier with ground or aerial application equipment (see Application directions section) for postemergent control of cleavers and kochia, including ALS resistant kochia and other broadleaved weeds infesting spring wheat, durum wheat, winter wheat, spring barley and oats. See following table for weeds controlled/suppressed and applications rates.

#### Weeds Controlled or Suppressed By Cavalier Alone

Weeds Controlled	Cavalier Rate (L/ha)
chickweed* (up to 8 cm)	0.41
cleavers (1-6 whorls)	0.21
cleavers (1-8 whorls)	0.31
kochia* (2-8 leaf)	0.31
round-leaved mallow (1-6 leaf)	0.41
volunteer flax (1-12 cm)	0.31

Weeds Suppressed	Cavalier Rate (L/ha)
hempenettle (2-6 leaf)	0.41
stork's-bill (1-8 leaf)	0.31
wild buckwheat (1-8 leaf)	0.21

\*Including biotypes resistant to Group 2 herbicides that inhibit the ALS enzyme.

**NOTE:** Cavalier activity is influenced by weather conditions. Optimum activity requires active crop and weed growth. The temperature range for optimum activity is 12°C to 24°C. Reduced activity will occur when temperatures are below 8°C or above 27°C. Frost before application (3 days) or shortly after (3 days) may reduce weed control and crop tolerance. Weed control may be reduced during stress conditions, e.g. drought, heat or cold stress, or if weeds have initiated flowering, or if heavy infestations exist.

### **Application Timing**

Apply to actively growing spring wheat, durum wheat, spring barley and oats from the 2-leaf crop growth stage up to and including initiation of stem elongation. Apply to winter wheat in the spring from the 3 tiller stage to just before the flag leaf stage. Apply when weeds are actively growing. Best results are obtained from applications made to seedling weeds. Only weeds emerged at the time of treatment will be controlled. Extreme growing conditions such as drought or near freezing temperature prior to, at and following time of application may reduce weed control and increase the risk of crop injury at all stages of growth. Foliage that is wet at the time of application may decrease control. Cavalier applications are rainfast within 1 hour after application. Under conditions of low crop and high weed density, control may be reduced.

### **Preharvest/Grazing Intervals (Cavalier applied alone)**

- Livestock may be grazed on treated crops 3 days following application.
- Do not harvest the treated crop within 60 days after application.

## **APPLICATION DIRECTIONS**

### **Ground Application**

Using ground equipment, apply Cavalier alone or with tank mix partners as a broadcast treatment. Apply Cavalier alone at the recommended rates in a spray volume of 50-100 L water/ha. When tank mixing refer to the label of the tank mix partner label for additional instructions, water volumes, precautions and weeds controlled.

### **Aerial Application**

DO NOT use human flaggers.

Use Cavalier alone or tank mixed with a product registered for aerial application as a broadcast treatment. Apply the recommended rates of Cavalier and tank mix partner as indicated elsewhere on this label. Apply in a spray volume of 30-50 L water/ha. Refer to the tank mix partner label for additional instructions, precautions and weeds controlled. Apply only by fixed-wing or rotary aircraft equipment which has been functionally and operationally calibrated for the atmospheric conditions of the area and the application rates and conditions of this label.

Label rates, conditions and precautions are product specific. Read and understand the entire label before opening this product. Apply only at the rate recommended for aerial application on this label. Where no rate for aerial application appears for the specific use, this product cannot be applied by any type of aerial equipment. Ensure uniform application. To avoid streaked, uneven or overlapped application, use appropriate swath marking devices.

### **Use Precautions**

Apply only when meteorological conditions at the treatment site allow for complete and even coverage. Apply only under conditions of good practice specific to aerial application as outlined in the National Aerial Pesticide Application Manual, developed by the Federal/ Provincial/ Territorial Committee on Pest Management and Pesticides.

### **Operator Precautions**

Do not allow the pilot to mix chemicals to be loaded onto the aircraft. Loading of premixed chemicals with a closed system is permitted. It is desirable that the pilot have communication capabilities at each treatment site at the time of application.

The field crew and the mixer/loaders must wear chemical resistant gloves, coveralls and goggles or face shield during mixing/loading, cleanup and repair. Follow the more stringent label precautions in cases where the operator precautions exceed the generic label recommendations on the existing ground boom label. All personnel on the job site must wash hands and face thoroughly before eating and drinking. Protective clothing, aircraft cockpit and vehicle cabs must be decontaminated regularly.

### **Product Specific Precautions**

Read and understand the entire label before opening this product. If you have questions, call the manufacturer at 1-888-975-4769 or obtain technical advice from the distributor or your provincial agricultural representative. Application of this specific product must meet and/or conform to the following:

- The interaction of many equipment-and-weather-related factors determine the potential for spray drift. Users are responsible for considering all these factors when making decisions.

The following drift management requirement must be followed to avoid off-target drift movement from aerial applications: Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

### **TANK-MIX COMBINATIONS - CAVALIER + LIQUID ACHIEVE<sup>1</sup> SC HERBICIDE OR ACHIEVE LIQUID HERBICIDE (Do not apply to oats)**

For control of wild oats and green foxtail in spring wheat, winter wheat and spring barley apply 0.5 L/ha of Liquid Achieve SC or Achieve Liquid with Cavalier. Refer to the above table for rates and broadleaved weeds controlled or suppressed with Cavalier. Read both product labels thoroughly for more information on precautions and additional directions for use. To control additional broadleaved weeds tank mix with either 2,4-D ester or MCPA ester up to a maximum of 560 g ae/ha (equivalent to 1.0 L/ha of 2,4-D LV600 Herbicide (0.85 L/ha 2,4-D Ester 700 Herbicide) or 1.12 L/ha of MCPA LV500 Herbicide) (0.93 L/ha MCPA Ester 600 Herbicide) or 1.5 to 2.0 L/ha Curtail M Herbicide. Refer to the 2,4-D ester or MCPA ester tank mix partner label for rates less than 560 g ae/ha and weeds controlled.

### **Mixing Instructions**

1. Begin to fill sprayer tank with clean water, and engage agitator. Agitation must be continued throughout the entire mixing and spraying procedure.
2. When the sprayer is three quarters full of water, add Liquid Achieve SC or Achieve Liquid. If more than one container of Liquid Achieve SC or Achieve Liquid is to be used, add all Liquid Achieve SC or Achieve Liquid containers prior to adding Cavalier.
3. Add Cavalier next. If more than one container of Cavalier is to be used, add all Cavalier containers prior to adding any other tank-mix partners.
4. If 2,4-D ester, MCPA ester or Curtail M are also being added, add these next. If more than one container of 2,4-D ester, MCPA ester or Curtail M is to be used, add all 2,4-D ester, MCPA ester or Curtail M containers prior to adding Turbocharge D or Turbocharge.
5. Lastly, add the required amount of Turbocharge D or Turbocharge and then continue to fill tank to desired level with water.

### **TANK-MIX COMBINATIONS - CAVALIER + CURTAIL<sup>TM</sup> M HERBICIDE**

Cavalier mixed with Curtail M Herbicide will control a wide spectrum of broadleaf weeds. Refer to Curtail M Herbicide label for additional precautions and directions for use, particularly crop rotation restrictions.

### **Mixing Instructions**

Add the correct amount of Cavalier to spray tank 1/2 filled with water and agitate. Add the correct amount of Curtail M Herbicide and continue to agitate.

### Timing of Application

Apply postemergence when weeds are in the seedling stage (2-4 leaf) and when spring wheat, durum wheat, spring barley and oats are in the 3-leaf to just before the flag leaf emergence stage. Apply to winter wheat in the spring from the 3 tiller stage to just before the flag leaf stage. Do not apply later than the flag-leaf stage.

**Low Rate: To control or suppress the following weeds apply a uniform spray containing Cavalier at 0.31 L/ha tank mixed with Curtail M Herbicide at 1.5 L/ha.**

#### Weeds Controlled:

Canada thistle (low infestations)	kochia***	stinkweed
cleavers (1-8 whorls)	lamb's-quarters	sunflower, volunteer
flax, volunteer (1-12 cm)	mustard, wild	wild buckwheat (1-8 leaf)
flixweed (spring seedling 2-4 leaf)	shepherd's-purse	

#### Weeds Suppressed:

stork's-bill (1-8 leaf)

**High Rate: To control or suppress the following weeds apply a uniform spray containing Cavalier at 0.41 L/ha tank mixed with Curtail M Herbicide at 2.0 L/ha.**

#### Weeds Controlled:

Canada thistle*	lamb's-quarters	sow-thistle (perennial) *
canola (volunteer)	redroot pigweed	stinkweed
cleavers (1-8 whorls)	round-leaved mallow (1-6 leaf)	stork's-bill (1-8 leaf)
common chickweed*	Russian pigweed	sunflower (volunteer)
common groundsel	scentless chamomile	tartary buckwheat
dandelion**	shepherd's-purse	volunteer flax (1-12 cm)
flixweed**	smartweed	wild buckwheat (1-8 leaf)
hemp-nettle (2-6 leaf stage)	sow-thistle (annual)	wild mustard
kochia***		

\* Season long control, with some regrowth in the fall (top growth control).

\*\* Spring rosettes only.

\*\*\* Including biotypes resistant to Group 2 herbicides that inhibit the ALS enzyme.

The active ingredients in this tank mixture will only control chickweed that is emerged at time of application. Chickweed plants which emerge after application will not be controlled. To improve the reduction in chickweed population at the end of season, delay the timing of application as late as possible to when the majority of chickweed plants have emerged. The reduction in chickweed population will also be improved in crops which are more competitive and which allow limited light penetration.

#### Pre-Harvest/Grazing Intervals (Cavalier + Curtail M Herbicide)

- Do not cut or graze treated fields within 7 days after application.
- Do not harvest the treated mature crop within 60 days after application.

When tank mixing with Curtail M Herbicide, wear goggles or face shield, coveralls and chemically resistant gloves, apron and boots when mixing, loading and during clean-up and repair. Curtail M Herbicide contains an ingredient that is rapidly absorbed through the skin and respiratory tract.

#### TANK MIXES WITH CAVALIER + CURTAIL M HERBICIDE FOR ANNUAL GRASS CONTROL (Do not apply to oats)

Tank mixtures of Cavalier + Curtail M Herbicide with other herbicides will provide control of additional weeds. See following table for tank mixes with Cavalier + Curtail M Herbicide. Follow all precautions, minimal interval to harvest and directions for use on the Cavalier and tank-mix partner labels.

**Tank-Mix Combinations with Cavalier at 0.31 L/ha + Curtail M Herbicide at 1.5 L/ha or Cavalier at 0.41 L/ha + Curtail M Herbicide at 2.0 L/ha**

Herbicide Tank-Mix Partner	Crops Registered	Rate of Tank-Mix Partner	Adjuvant Rate	Additional Weeds
Liquid Achieve SC or Achieve Liquid	spring wheat, durum wheat, winter wheat, spring barley	0.5 L/ha	Turbocharge D or Turbocharge 0.5 L/100 L of spray volume (0.5% v/v)	green foxtail wild oats
Assert 300 SC	spring wheat, durum wheat, spring barley	1.3 L/ha 1.6 L/ha	Refer to Assert 300 SC label	wild oats (1-3 leaf) wild oats (4 leaf)
Puma 120 Super	spring wheat, durum wheat, spring barley	385 mL/ha 770 mL/ha	None required	green foxtail only green foxtail, wild oats & barnyard grass
Everest 70 WDG or Everest Solupak 70 DF	spring wheat, durum wheat	43 g/ha	Refer to Everest label	green foxtail wild oats

**TANK-MIX COMBINATION - CAVALIER + 2,4-D ESTER HERBICIDE (Do not apply to oats)**

For control of a wide spectrum of broadleaved weeds (see following table) apply Cavalier tank mixed with 2,4-D ester herbicide. Apply postemergence when weeds are in the seedling stage (2-4 leaf) and when spring wheat, durum wheat, winter wheat and spring barley are in the 4-leaf to flag-leaf stage. Apply to winter wheat in the spring from the 3 tiller stage to just before the flag leaf stage. Application before the 4-leaf stage of wheat and barley may cause severe twisting of leaves and stem, and head deformities which may reduce yield up to 10%. Do not apply later than the flag-leaf stage.

**Rates of Applications**

**I. Low Rate:** To control the following weeds apply a uniform spray containing 0.23 L/ha Cavalier and 420 g a.e./ha 2,4-D ester herbicide (equivalent to 0.64 L/ha of 2,4-D Ester LV700 Herbicide).

**Weeds Controlled:**

bluebur	goat's-beard	shepherd's-purse
burdock	hoary cress*	stinkweed
canola (volunteer)	kochia***	sunflower (annual)
cleavers (1-6 whorls)	lamb's-quarters	vetch
clovers (sweet)	mustards (except green, dog & tansy)	wild radish
cocklebur	plantain	wild mustard
flixweed	prickly lettuce	wild buckwheat (1-6 leaf)
field horsetail*	ragweed	

**II. High Rate:** To control the above weeds plus the additional weeds listed below, apply a uniform spray containing 0.31 L/ha of Cavalier and 560 g a.e./ha of 2,4-D ester herbicide (equivalent to 0.85 L/ha of 2,4-D Ester LV700 Herbicide).

**Additional Weeds Controlled:**

blue lettuce*	hairy galinsoga	Russian thistle
cleavers (1-8 whorls)	hedge bindweed	smartweed
dandelion**	lady's-thumb	stork's-bill (1-8 leaf)
docks	leafy spurge*	tansy mustard
dog mustard	oak-leaved goosefoot	tartary buckwheat
field bindweed*	redroot pigweed	volunteer flax (1-12 cm)
field peppergrass	round-leaved mallow (1-6 Leaf)	wild buckwheat (1-8 leaf)
gumweed		

**Weeds Suppressed:**

common chickweed\*\*\* (up to 8 cm)    hemp-nettle (2-6 leaf stage)    Canada thistle\*  
 sow-thistle (perennial) \*    sow-thistle (annual)

\* Top growth control only

\*\* Spring rosettes

\*\*\* Including biotypes resistant to Group 2 herbicides that inhibit the ALS enzyme

**NOTE:** The activity of Cavalier combined with 2,4-D ester herbicide is influenced by weather conditions. Optimum activity requires active crop and weed growth. The temperature range for optimum activity is 12°C to 24°C. Reduced activity will occur when temperatures are below 8°C or above 27°C. Frost before application (3 days) or shortly after (3 days) may reduce weed control and crop tolerance. Weed control may be reduced during stress conditions, e.g. drought, heat or cold stress, or if weeds have initiated flowering, or if heavy infestations exist.

**Mixing Instructions**

Add the correct amount of Cavalier to spray tank 1/2 filled with water and agitate. Add the correct amount of 2,4-D ester herbicide (e.g. 2,4-D Ester LV700 Herbicide) and continue to agitate.

**Pre-Harvest/Grazing Intervals (Cavalier + 2,4-D ester herbicide)**

- Do not permit lactating dairy animals to graze fields within 7 days after application.
- Do not harvest forage or cut hay within 30 days after application.
- Withdraw meat animals from treated fields at least 3 days before slaughter.
- Do not harvest the treated mature crop within 60 days after application.

**TANK-MIX COMBINATIONS - CAVALIER + 2,4-D ESTER HERBICIDE + OTHER HERBICIDES (Do not apply to oats)**

Tank mixtures of Cavalier + 2,4-D ester herbicide with other herbicides will provide control of additional weeds. For products which may be tank mixed with Cavalier + 2,4-D ester herbicide and the additional weeds controlled see following table. Follow all precautions, minimal interval to harvest and directions for use on the Cavalier and tank-mix partner labels.

**Tank-Mix Combinations with Cavalier (0.31 L/ha) + 2,4-D ester herbicide (560 g a.e./ha) or Cavalier (0.23 L/ha) + 2,4-D ester herbicide (420 g a.e./ha)**

Herbicide Tank-Mix Partner	Crops Registered	Rate of Tank-Mix Partner	Adjuvant Rate	Additional Weeds
Liquid Achieve SC or Achieve Liquid*	spring wheat, durum wheat, winter wheat, spring barley	0.5 L/ha	Turbocharge D or Turbocharge 0.5 L/100 L of spray volume (0.5% v/v)	green foxtail, wild oats
Assert 300 SC	spring wheat, durum wheat, spring barley	1.3 L/ha 1.6 L/ha	Refer to Assert 300 SC label	wild oats (1-3 leaf stage) wild oats (4 leaf stage)
Puma 120 Super	spring wheat, durum wheat	385 mL/ha 770 mL/ha	None required	green foxtail only green foxtail, plus wild oats & barnyard grass
Simplicity™***	spring wheat, durum wheat, winter wheat	0.5 L/ha	None required	barnyard grass (1-5 leaf), common chickweed (up to 10 cm), hemp nettle (1-8 leaf), Japanese brome (1-6 leaf), wild oats (up to 4 leaf, 2 tiller), wild buckwheat (1-4 leaf)
Everest 70 WDG or Everest Solupak 70 DF	spring wheat, durum wheat	43 g/ha	Refer to Everest label	green foxtail, wild oats

\*This tank-mix may cause temporary crop injury. However, yield will not normally be affected. This tank-mix may reduce control of wild oats compared to Liquid Achieve SC or Achieve Liquid Herbicide alone.

\*\*\*Tank mixing with Simplicity only applies to the low rate of Cavalier + 2,4-D ester

**TANK-MIX COMBINATIONS – CAVALIER + 2,4-D ESTER HERBICIDE + REFINE EXTRA 75 DF HERBICIDE OR REFINE EXTRA 75 TOSS-N-GO HERBICIDE OR REFINE SG HERBICIDE OR REFINE SG TOSS-N-GO HERBICIDE OR RETAIN A HERBICIDE (Do not apply to oats)**

**Spring Wheat (excluding durum) and spring barley**

For control of a wide spectrum of broadleaf weeds, including cleavers, Cavalier may be tank mixed with 2,4-D ester herbicide and Refine Extra 75 DF Herbicide or Refine Extra 75 Toss-N-Go Herbicide or Refine SG Herbicide or Refine SG Toss-N-Go Herbicide or Retain A Herbicide. Apply Cavalier at 0.16 L/ha tank mixed with Refine Extra 75 DF Herbicide or Refine Extra 75 Toss-N-Go Herbicide at 20 g/ha, or Refine SG Herbicide or Refine SG Toss-N-Go Herbicide or Retain A Herbicide at 30 g/ha, 2,4-D ester herbicide at 280 g a.e./ha (equal to 0.5 L/ha of 2,4-D Ester LV 600 or 0.42 L/ha of 2,4-D Ester LV 700) and a non-ionic surfactant (Agral 90, Ag-Surf or Citowett Plus) at 2 L per 1000 L of spray solution. A spray volume of 100 L/ha should be utilized. Apply postemergence when weeds are in the seedling up to 4-leaf/whorls stage, and when spring wheat (excluding durum) and spring barley are in the 4-leaf to flag-leaf stage. Do not apply to crops underseeded to legumes.

**Weeds Controlled:**

annual smartweed (green smartweed, lady's thumb)	groundsel (common)	shepherd's purse
ball mustard	hemp-nettle	stinkweed
chickweed (1-6 leaf) <sup>1</sup>	kochia <sup>3</sup>	tartary buckwheat
cleavers <sup>2</sup>	lamb'-quarters	volunteer rapeseed <sup>4</sup>
corn spurry	narrow-leaved hawk's beard	volunteer sunflower
cow cockle	redroot pigweed	wild buckwheat <sup>5</sup>
flixweed	Russian thistle	wild mustard

<sup>1</sup> Spray before crop canopy prevents thorough coverage of weeds. Chickweed emerging after application will not be controlled.

<sup>2</sup> Excluding Group 2 resistant cleavers

<sup>3</sup> Excluding Group 2 resistant kochia

<sup>4</sup> The tank-mix will not control imazethapyr tolerant canola varieties (e.g. Clearfield varieties or other varieties with the Pursuit Smart trait)

<sup>5</sup> Apply to actively growing wild buckwheat from the cotyledon to 3-leaf stage. Control may be reduced under environmental stress. Large plants may regrow after treatment

**Weeds Suppressed:**

Canada thistle <sup>6</sup>	sow thistle <sup>6</sup>	scentless chamomile
round leaved mallow (2-6 leaf) <sup>7</sup>	stork's bill (2-6 leaf)	toadflax (to 15 cm) <sup>8</sup>

<sup>6</sup> Apply when most of the thistles have emerged and are actively growing. Apply before bud stage, and before crop canopy prevents thorough coverage of thistles, when thistles are no larger than 15 cm in height for best top growth control. A single application will effectively inhibit the ability of emerged thistles to compete with the crop. Later emerging thistles will not be controlled.

<sup>7</sup> Apply to actively growing round leaved mallow. Will keep mallow stunted, but may not be able to reduce overall populations.

<sup>8</sup> A control program for this weed includes chemical application and frequent tillage.

**Mixing Instructions**

Fill the tank to 1/3 full of clean water. With agitator running, add required amount of Refine Extra 75 DF Herbicide or Refine Extra 75 Toss-N-Go Herbicide or Refine SG Herbicide or Refine SG Toss-N-Go Herbicide or Retain A Herbicide and continue to agitate for a minimum of 5 minutes to ensure the Refine Extra 75 DF Herbicide or Refine Extra 75 Toss-N-Go Herbicide or Refine SG Herbicide or Refine SG Toss-N-Go Herbicide or Retain A Herbicide is completely dissolved. After it is fully dissolved add the Cavalier with continuous agitation. Add the 2,4-D ester herbicide and the rest of the water. Then add adjuvant. Use a spray volume of 100 L/ha. Consult the 2,4-D label for additional application instructions and use precautions.

**Preharvest/Grazing Intervals (Cavalier + Refine Extra + 2,4-D ester)**

- Allow 7 days between application and grazing of lactating dairy animals.
- Do not harvest forage or cut hay within 30 days after application.
- Remove meat animals from treated fields at least 3 days prior to slaughter.
- Do not harvest the treated mature crop within 60 days after application.

## TANK-MIX COMBINATION - CAVALIER + MCPA ESTER HERBICIDE

For control of a wide spectrum of broadleaved weeds (see following table) apply Cavalier at 0.31 L/ha tank mixed with MCPA LV500 Herbicide at 1.12 L/ha or MCPA Ester 600 Herbicide at 0.93 L/ha. Apply postemergence when weeds are in the seedling stage (2-4 leaf) and when spring wheat, durum wheat, spring barley and oats are in the 3-leaf to flag-leaf stage. Apply to winter wheat in the spring from the 3 tiller stage to just before the flag leaf stage. Application before the 3-leaf stage of wheat and barley may cause severe twisting of leaves and stem, and head deformities which may reduce yield up to 10%. Do not apply later than the flag-leaf stage. Do not apply to cereals underseeded with legumes.

### Mixing Instructions

Add the correct amount of Cavalier to spray tank 1/2 filled with water and agitate. Add the correct amount of MCPA ester herbicide and continue to agitate.

### Weeds Controlled

burdock, common	kochia*	shepherd's-purse
canola, volunteer	lamb's-quarters	stinkweed
cleavers (1-8 whorls)	mustard (except dog & green tansy)	sunflower, annual
cocklebur	pigweed, redroot (1-4 leaf)	vetch
flax, volunteer (1-12 cm)	prickly lettuce	wild radish
flixweed	ragweed, common	wild buckwheat (1-8 leaf)
hempnettle (2-6 leaf)		

### Weeds Suppressed

green smartweed                      stork's-bill (1-8 leaf)

\*Including biotypes resistant to Group 2 herbicides that inhibit the ALS enzyme.

### Pre-Harvest/Grazing Intervals (Cavalier + MCPA ester herbicide)

- Allow 7 days between application and grazing/cutting for hay.
- Do not harvest the treated mature crop within 60 days after application.

## TANK-MIX COMBINATIONS - CAVALIER + MCPA ESTER HERBICIDE + OTHER HERBICIDES (Do not apply to oats)

Tank mixtures of Cavalier+ MCPA ester herbicide with other herbicides will provide control of additional weeds. For products which may be tank mixed with Cavalier + MCPA ester herbicide and the additional weeds controlled see following table. Follow all precautions, minimal interval to harvest and directions for use (including timing of application) on the Cavalier and tank-mix partner labels.

### Tank-Mix Combinations with Cavalier (0.31 L/ha) + MCPA LV500 Herbicide (1.12 L/ha) or MCPA Ester 600 Herbicide (0.93 L/ha)

Herbicide Tank-Mix Partner	Crops Registered	Rate/ha	Adjuvant Rate	Additional Weeds
Liquid Achieve SC or Achieve Liquid*	spring wheat, durum wheat, winter wheat, spring barley	0.5 L/ha	Turbocharge D or Turbocharge 0.5 L/ha (0.5% v/v)	green foxtail, wild oats
Assert 300 SC	spring wheat, durum wheat, spring barley	1.3 L 1.6 L	Refer to Assert 300 SC label	wild oats (1-3 leaf) wild oats (4 leaf)
Everest 70 WDG or Everest Solupak 70 DF	spring wheat, durum wheat	43 g/ha	Refer to Everest label	green foxtail, wild oats
Puma 120 Super	spring wheat, durum wheat, spring barley	0.77 L	None required	wild oats

\*MCPA ester can be tank mixed at rates up to a maximum of 560 g ae/ha with this tank-mix combination.

## **TANK-MIX COMBINATION - CAVALIER +SIMPLICITY™ (Do not apply to oats)**

For control of a wide spectrum of broadleaf and grass weeds (see following table) in spring wheat, durum wheat and winter wheat, apply Cavalier tank mixed with Simplicity. Apply post-emergence when weeds are actively growing: grass weeds up to the 4 leaf, 2 tiller stage and broadleaf weeds as indicated in the following table. Best results are obtained from applications made to seedling weeds. Apply to actively growing spring or durum wheat from the 3 leaf stage to the first node stage. Apply to winter wheat in the 2-7 leaf, 4 tiller stage with a spring application. Extreme growing conditions such as drought or near freezing temperature prior to, at, or following time of application may reduce weed control and increase the risk of crop injury at all stages of growth. Under conditions of low crop and high weed density, control may be reduced.

### **Mixing Instructions**

Fill the sprayer tank ½ full of water and start sprayer tank agitation. Add the required amount of Simplicity. Add the correct amount of Cavalier and continue to agitate.

### **Preharvest/Grazing Intervals (Cavalier and Simplicity)**

- Livestock may be grazed on treated crops 7 days following application.
- Do not harvest the treated crop within 60 days after application.

### **Rates of Application**

**I. Low Rate:** To control or suppress the following weeds apply a uniform spray containing Cavalier at 0.21 L/ha tank mixed with Simplicity at 375 mL/ha.

#### **Weeds Controlled:**

cleavers (1-6 whorls)                      wild oats (up to 4 leaf, 2 tiller) \*

\*Under low wild oat populations (<75 plants/m<sup>2</sup>)

**II. High Rate:** To control the above weeds plus the additional weeds listed below, apply a uniform spray containing Cavalier at 0.31 L/ha with Simplicity at 500 mL/ha.

#### **Additional Weeds Controlled:**

barnyard grass (1-5 leaf)	chickweed, common (up to 10 cm)	cleavers (1-8 whorls)
foxtail, yellow (1-5 leaf)	hemp nettle (1-8 leaf)	Japanese brome (1-6 leaf)
kochia* (2-8 leaf)	red root pigweed (1-8 leaf)	smartweed (lady's thumb, 1-5 leaf)
volunteer canola** (1-6 leaf)	volunteer flax (1-12 cm)	

\* Including biotypes resistant to Group 2 herbicides that inhibit the ALS enzyme.

\*\* Will not control volunteer Imidazolinone-tolerant canola

#### **Additional Weeds Suppressed:**

brome, downy (2-6 leaf, 2 tillers)	storks-bill (1-8 leaf)
foxtail, green (1-5 leaf)	wild buckwheat (1-4 leaf)

## **TANK-MIX COMBINATIONS –CAVALIER + SIMPLICITY + OTHER HERBICIDES (Do not apply to oats)**

When tank mixing Cavalier + Simplicity at either the low or high rates, the addition of other herbicides will provide control of additional weeds. For products which may be tank mixed with Cavalier + Simplicity and the additional weeds controlled see following table. Follow all precautions, minimal interval to harvest and directions for use on the Cavalier and tank-mix partner labels.

**Tank-Mix Combinations with Cavalier (0.21 L/ha) + Simplicity Herbicide (375 mL/ha) or Cavalier (0.31 L/ha) + Simplicity herbicide (500 mL/ha)**

Herbicide Tank-Mix Partner	Crops Registered	Rate of Tank-Mix Partner	Additional Weeds Controlled
2,4-D ester*	spring wheat, durum wheat, winter wheat	Up to 420 g ae/ha	Susceptible weeds such as: mustard (except dog and green tansy), flixweed, bluebur, burdock, cocklebur, stinkweed, goatsbeard, prickly lettuce, lamb's-quarters, plantain, ragweeds, Russian thistle, shepherd's purse, annual sunflower, sweet clover, volunteer canola, wild buckwheat, wild radish *Consult 2,4-D ester labels for weed stages and rates
MCPA ester*	spring wheat, durum wheat, winter wheat	Up to 560 g ae/ha	Burdock (before the 4-leaf stage), cocklebur, flixweed, plantain, lamb's-quarters, mustards (except dog and tansy), prickly lettuce, ragweeds, Russian pigweed, shepherd's-purse, stinkweed, vetch, wild buckwheat, wild radish, wild (annual) sunflower. *Consult MCPA ester labels for weed stages and rates

**RANGELAND, PERMANENT PASTURE, INDUSTRIAL AND OTHER NON-CROP AREAS OF CANADA**

**Cavalier Alone**

Apply Cavalier for post emergent control of kochia, including ALS resistant biotypes in non-cropland areas including roadsides, rights of way, permanent perennial grass cover areas, and industrial vegetation management areas. See Table for weed controlled and application rates.

**Kochia Control by Cavalier Alone**

**Weeds**

**Cavalier Rate (L/ha)**

Kochia\* (2-8 leaf) Control

0.84

Kochia\* (2-8 leaf) Suppression

0.42

\*Including biotypes resistant to Group 2 herbicides that inhibit the ALS enzyme.

**NOTE:** Cavalier activity is influenced by weather conditions. Optimum activity requires active weed growth. The temperature range for optimum activity is 12°C to 24°C. Reduced activity will occur when temperatures are below 8°C or above 27°C. Frost before application (3 days) or shortly after (3 days) may reduce weed control. Weed control may be reduced during stress conditions, e.g. drought, heat or cold stress, or if weeds have initiated flowering, or if heavy infestations exist.

**APPLICATION DIRECTIONS**

**Application Timing**

Apply when weeds are actively growing. Best results are obtained from applications made to seedling weeds. Only weeds emerged at the time of treatment will be controlled. Extreme growing conditions such as drought or near freezing temperature prior to, at and following time of application may reduce weed control. Foliage that is wet at the time of application may decrease control. Cavalier applications are rainfast within 1 hour after application.

**Individual Plant or Spot/Strip Applications**

Use the following mixing chart to mix Cavalier with enough water to make the correct amount of spray solution. Use equipment designed for individual plant or spot/strip application, such as a backpack sprayer or hose and handgun, to spray weeds. Thoroughly and uniformly wet the foliage of all target plants but not to the point of runoff. Direct spray away from aquatic habitats and non-target terrestrial plants. DO NOT apply this product directly to fresh water habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands), estuaries or marine habitats.

## Mixing Chart

Cavalier	Spray Solution (water and herbicide)
4.2 – 8.4 mL	10 L
42 – 84 mL	100 L
420 – 840 mL	1000 L

Use the higher rate in the rate range for kochia control or when growing conditions are less than favourable. The maximum annual application rate is 840 mL/ha.

## Restrictions

- **Grazing intervals:** There are no grazing restrictions for livestock following application.
- **Legumes:** Do not apply if the injury to legumes cannot be tolerated. Legumes may be less sensitive to herbicide injury after plant growth is mature and seed has set.
- Do not harvest grass for hay from treated areas within 7 days of application.

## Tank Mix Combination – Cavalier + Milestone™ Herbicide

Cavalier can be tank mixed with Milestone Herbicide to broaden the spectrum of weeds and invasive plants controlled. Use 0.42 – 0.84 L/ha Cavalier with 0.25 – 0.5 L/ha Milestone Herbicide. For mixing order see mixing instructions. When a tank mixture is used, follow all precautions, directions for use, and limitations on the tank-mix partner label.

## Mixing Instructions

1. Begin to fill sprayer tank with clean water, and engage agitator. Agitation must be continued throughout the entire mixing and spraying procedure.
2. When the sprayer is three quarters full of water, add Milestone Herbicide. If more than one container of Milestone Herbicide is to be used, add all Milestone Herbicide containers prior to adding any other tank-mix partners.
3. Add Cavalier next. Continue to fill tank to desired level with water.

## RESISTANCE MANAGEMENT RECOMMENDATIONS

For resistance management, Cavalier is a Group 4 herbicide. Any weed population may contain or develop plants naturally resistant to Cavalier and other Group 4 herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same field. Other resistance mechanisms that are not linked to site of action, but specific for individual chemicals, such as enhanced metabolism, may also exist. Appropriate resistance-management strategies should be followed.

To delay herbicide resistance:

- Where possible, rotate the use of Cavalier or other Group 4 herbicides within a growing season (sequence) or among growing seasons with different herbicide groups that control the same weeds in a field.
- Use tank mixtures with herbicides from a different group when such use is permitted. To delay resistance, the less resistance-prone partner should control the target weed(s) as effectively as the more resistance-prone partner.
- Herbicide use should be based on an integrated weed management program that includes scouting, historical information related to herbicide use and crop rotation, and considers tillage (or other mechanical control methods), cultural (for example, higher crop seeding rates; precision fertilizer application method and timing to favour the crop and not the weeds), biological (weed-competitive crops or varieties) and other management practices.
- Monitor weed populations after herbicide application for signs of resistance development (for example, only one weed species on the herbicide label not controlled). If resistance is suspected, prevent weed seed production in the affected area if possible by an alternative herbicide from a different group. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields, and planting clean seed.

- Have suspected resistant weed seeds tested by a qualified laboratory to confirm resistance and identify alternative herbicide options.
  - Contact your local extension specialist or certified crop advisors for any additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.
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- For further information or to report suspected resistance, contact Winfield United Canada at 1-888-975-4769.

**NOTICE TO USER**

This pest control product is to be used only in accordance with the directions on the label. It is an offence under the *Pest Control Products Act* to use this product in a way that is inconsistent with the directions on the label.

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