

GROUP	22	HERBICIDE
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# Craven®

Solution

COMMERCIAL (AGRICULTURAL)

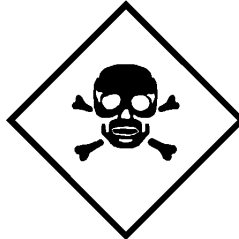
For Potato Vine Killing, Desiccation of Pulse, Oilseed and Legume Forage Seed Crops, Weed Control in Vegetable and Field Crops, Control of Corn Spurry in Oats and Weed Control in Non-crop Land (rights-of-way for transportation or utility corridors, airports, wasteland, garbage dumps and industrial parks).

**ACTIVE INGREDIENT:**

Diquat ion..... 240 g per litre  
(present as dibromide)

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

WARNING



POISON

**EYE AND SKIN IRRITANT**

REGISTRATION NO. **32231**  
PEST CONTROL PRODUCTS ACT

NET CONTENTS: **10 L- Bulk**

**Syngenta Canada Inc.**  
140 Research Lane, Research Park  
Guelph, Ontario N1G 4Z3  
Telephone: 1-877-964-3682

Label

**WARNING!**  
**\*HARMFUL OR FATAL IF SWALLOWED.**  
**\*CAUSES SUBSTANTIAL EYE INJURY AND SKIN IRRITATION.**  
**PROTECTIVE EYEWEAR AND CLOTHING ARE REQUIRED.**  
**\*DO NOT GET IN EYES, ON SKIN OR ON CLOTHING.**  
**HARMFUL IF INHALED, AVOID INHALING/BREATHING DUST, SPRAYS, ETC.**  
**\*NEVER TRANSFER TO OTHER CONTAINERS.**  
**\* KEEP OUT OF REACH OF CHILDREN AND ANIMALS.**  
**FULL DETAILS OF THESE HAZARDS ARE IN LABEL BELOW.**

## 1.0 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. The user assumes the risk to persons or property that arises from any such use of this product.

## 2.0 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 anything by mouth to an unconscious person.

**If in eyes**, **IMMEDIATELY** 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.

**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.

## 3.0 TOXICOLOGICAL INFORMATION

**To be effective, treatment for ingestion of the product must begin IMMEDIATELY. If swallowed**, give adsorbent suspension, for example either activated charcoal (100 g for adults or 2 g/kg body weight for children) or bentonite clay (100 to 150 g for adults or 2 g/kg body weight for children), mixed with a purgative ( $\text{MgSO}_4$ ,  $\text{Na}_2\text{SO}_4$  or mannitol). Maintain and monitor electrolyte and fluid status daily. Consider haemodialysis or haemoperfusion using charcoal column.

**If in eyes**, treat symptomatically, using antibiotics and steroids as necessary. Symptoms may develop gradually. Severe damage may be caused by apparently trivial contact and healing may be

delayed. Medical supervision should continue until complete healing has occurred.

The use of supplemental oxygen is contraindicated. Do not administer supplemental oxygen unless the patient develops severe hypoxemia.

#### 4.0 PRECAUTIONS

**EXCESSIVE EXPOSURE TO DIQUAT MAY CAUSE A HEALTH HAZARD. FOLLOWING THE DIRECTIONS AND PRECAUTIONS WILL REDUCE EXPOSURE.**

DO NOT get in eyes. DO NOT get on skin or clothing.

Do not contaminate food, feed, domestic or irrigation water supplies, lakes, streams and ponds.

Do not allow the pilot to mix chemicals to be loaded onto the aircraft. The pilot is allowed to load premixed chemicals with a closed system. It is desirable that the pilot have communication capabilities at each treatment site at the time of application. Apply only when the potential for drift beyond the area to be treated is minimal. Take into consideration wind speed, wind direction, temperature inversions, application equipment, and sprayer settings.

**RESTRICTED ENTRY INTERVAL (REI):** DO NOT enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 24 hours for all agricultural uses. For all other terrestrial uses, DO NOT enter or allow worker entry into treated areas during the restricted-entry interval of 12 hours.

If this pest control product is to be used on a commodity that may be exported to other countries in the world and you require information on acceptable residue levels in these countries, please contact Syngenta Canada Inc. at 1-87-SYNGENTA / 1-877-964-3682.

#### 5.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

Wear chemical-resistant coveralls over a long-sleeved shirt and long pants, chemical-resistant gloves, socks, chemical-resistant footwear, goggles and respirator or a full-face respirator with a NIOSH-approved organic-vapour-removing cartridge with a prefilter approved for pesticides, or a NIOSH-approved canister approved for pesticides during mixing, loading and application, clean-up and repair. For handheld application, wear protective eyewear, chemical-resistant headgear and respiratory protection when applying above waist height, including overhead. Gloves are not required during application within a closed cab and/or cockpit.

Most exposure to pesticides is by absorption through skin, especially from concentrated material handled at the time of mixing and loading. Rolling down the sleeve end of the glove will prevent drips of liquid from running down the glove onto your arm.

Users should remove personal protective equipment immediately after handling this product. Wash the outside of the gloves before removing. As soon as possible, wash thoroughly and change into clean clothing. REMOVE CONTAMINATED CLOTHING IMMEDIATELY.

Launder contaminated clothing prior to reuse and separate from household laundry. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables

exist, use detergent and hot water. Store and wash PPE separately from other laundry.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with the product's concentrate. Do not reuse them.

Do not eat, drink, handle or use tobacco, or apply cosmetics in areas where there is potential for exposure to this product. Users should wash hands and face before eating, drinking, chewing gum, handling tobacco or using the toilet.

## **6.0 ENVIRONMENTAL PRECAUTIONS**

ANY DRIFT OF THIS PRODUCT OUTSIDE THE IMMEDIATE FIELD AREA MAY RESULT IN DAMAGE TO CROPS, SHELTERBELTS, ORNAMENTAL PLANTS, LAWNS, GRAZING AREAS, WILDLIFE COVER, WETLANDS, AND OTHER DESIRABLE GROWTH.

**TOXIC** to aquatic organisms and non-target terrestrial plants. Observe spray buffer zones specified under DIRECTIONS FOR USE.

To reduce runoff from treated areas into aquatic habitats avoid applications 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.

## **7.0 STORAGE**

Keep in original container, tightly closed, in a safe place away from children. Store this product away from food and feed.

Store above 0 °C. If crystallization occurs because of storage below this temperature, allow the product to warm to room temperature and agitate gently until reconstituted.

## **8.0 DISPOSAL**

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.

### **FOR DISPOSAL OF PLASTIC 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 rinsate to the spray mixture in the tank.
2. Make the empty, rinsed container unsuitable for further use.

If there is no container collection site in your area, dispose of the container in accordance with provincial requirements.

**FOR 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.

***IN CASE OF EMERGENCY INVOLVING A MAJOR SPILL, FIRE OR POISONING,  
CALL 1-800-327-8633 (FASTMED)***

Craven® is a trademark of Winfield Solutions, LLC

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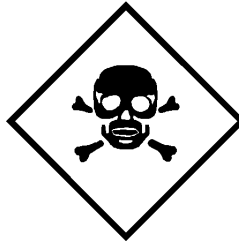
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Pamphlet

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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.

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CALL 1-800-327-8633 (FASTMED)***

## **9.0 PRODUCT INFORMATION**

### **9.1 General Information**

Craven® is a non-volatile, fast acting herbicide. It is inactivated on contact with the soil and therefore, has no residual effect. The herbicidal effect varies with weed species, hence repeat applications may be necessary upon certain perennial weeds. Annual weeds are generally killed with one application.

Germination of seed is not affected by Craven for all crops which could go for seed sale.

Craven is easily applied in high or low volume sprayers. Very low volume or ultra low volume equipment for aerial application, e.g. rotary atomizers, are not recommended. Always use the recommended water volume. Complete coverage is essential. DO NOT USE MIST BLOWERS.

Craven is rapidly absorbed by plants, and effectiveness is not reduced by rain falling shortly after treatment. EFFECTIVENESS OF THE TREATMENT MAY BE ENHANCED WHEN APPLICATION IS MADE ON CLOUDY DAYS OR PRIOR TO PERIODS OF DARKNESS.

Use clean (non-turbid) water for spraying Craven. Muddy water will reduce the effectiveness of Craven.

THE USER MUST BE AWARE THAT THIS PRODUCT ACCELERATES THE NATURAL PROCESS OF CROP DRY DOWN. IN CASES OF ADVERSE WEATHER CONDITIONS SUCH AS HEAVY RAIN, HAIL OR STRONG WIND, THE RESULTANT DAMAGE TO YOUR CROP MAY BE ENHANCED. TAKE NOTE THAT CERTAIN CROPS ARE MORE FRAGILE THAN OTHERS.

Crop waste remaining after harvest (e.g. pea vines, alfalfa stems) may be used as a feed supplement for livestock.

### **9.2 Harvesting**

The use of Craven facilitates direct combining of many field crops such as lentils, peas, canola, mustard or legumes. Growers who wish to swath desiccated crops should wait until the crop has dried down sufficiently to allow the desiccated crop to be picked up and threshed immediately after swathing. Delaying threshing after swathing desiccated crops will increase shattering and seed loss.

For most crops, harvest can normally commence within 4-10 days after desiccation. However, late

fall applications and adverse weather conditions such as rainfall, cool temperatures and high humidity will slow plant desiccation and keep seed moisture levels high which can delay commencement of harvest beyond 10 days after application. When those conditions prevail after Craven desiccation, commence harvest when plant material is dry and seed moisture level allows efficient harvesting. To minimize seed loss and to maintain seed quality, harvest of desiccated crops should commence as soon as seed moisture reaches the level for normal harvest.

### 9.3 Cleaning Sprayer After Use

It is important to thoroughly wash equipment after spraying - use a wetting agent (e.g. a non-ionic surfactant at 60 mL per 100 L of water), flush and spray out, then thoroughly rinse with clean water. When possible, the equipment should be filled with clean water and left overnight. Spray out before storing equipment or using for other materials.

## 10.0 DIRECTIONS FOR USE

### 10.1 General Information

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.

This product may be tank mixed with a fertilizer, a supplement, or with registered pest control products, whose labels also allow tank mixing, provided the entirety of both labels, including Directions For Use, Precautions, Restrictions, Environmental Precautions, and Spray Buffer Zones are followed for each product. In cases where these requirements differ between the tank mix partner labels, the most restrictive label must be followed. Do not tank mix products containing the same active ingredient unless specifically listed on this label.

In some cases, tank mixing pest control products can result in reduced pesticide efficacy or increased host crop injury. The user should contact Syngenta Canada Inc. at 1-87-SYNGENTA (1-877-964-3682) for information before applying any tank mix that is not specifically recommended on this label.

Syngenta Canada Inc. has not fully assessed performance (efficacy) and/or crop tolerance (phytotoxicity) of all potential tank-mixes under all environmental conditions or for all crop varieties. Tank mixes that are not specifically listed on this label should be tested on a small area first, under local conditions and using standard practices, to confirm the tank mix is suitable for widespread application.

To determine the physical compatibility of this product with other products, use a jar test.

Always read and follow label directions including WALES mixing order.

DO NOT tank mix with SC formulations or clay based products or unsatisfactory control will result.

Mixers and loaders supporting aerial applications are required to use closed systems.

Refer to the Spray Buffer Zones Section for more information on specific spray buffer zones requirement.

## **10.2 Ground Application**

### **10.2.1 General Information**

Field sprayer application: DO NOT apply during period 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.

Refer to the Spray Buffer Zones Section for more information on specific spray buffer zones requirement.

Ground spraying may be done with any standard boom sprayer.

Use a non-ionic surfactant, a wetting and spreading agent, at a rate of 1 L for each 1000 L of spray mixture unless otherwise stated. For beans or lentils, LI 700® at a rate of 2.5 L for each 1000 L of spray mixture may be used. See potato vine killing use for detailed information on use of adjuvant on potatoes in the Prairie provinces.

AGITATE WELL BEFORE USE.

### **10.2.2 Mixing Instructions**

1. Ensure that the sprayer interior is clean, then fill the spray tank with ½ the required amount of carrier and engage gentle agitation. Good agitation is indicated by a rippling or rolling action on the surface of the water.
2. Add any WG or DF formulation mix partners and agitate to ensure complete mixing.
3. Add any SE formulation mix partners and agitate to ensure complete mixing.
4. Add any EC formulation mix partners and agitate to ensure complete mixing.
5. Fill the tank to ¾ the required amount of water.
6. Add Craven and agitate to ensure complete mixing.
7. Add any solution (SN or SL) formulation mix partners and agitate to ensure complete mixing.
8. Finish filling the sprayer with carrier, maintaining good agitation.
9. Always ensure that agitation is maintained until spraying is completed. After any break in spraying operations, agitate thoroughly before spraying again. Reduce agitation once tank volume is reduced to about one third of capacity.
10. Do not mix, load or clean spray equipment where there is a potential to contaminate wells or aquatic systems.

When using chemical handling equipment to fill the sprayer, the following additional recommendations apply:

- WG and DF formulations are preferentially batch mixed.
- SN and SL formulations may be inducted or batch mixed.
- EC formulations are preferentially batch mixed.

### 10.2.3 Spraying Instructions

1. Carrier Volume: Apply in a minimum spray volume of 150 L/ha OR the volume given in the crop and pest specific instructions tabulated below, whichever is LARGER.
2. Sprayer Agitation: Use a jet agitator or liquid sparge tube which recirculates 7-10% of the tank per minute. DO NOT use an air sparger.
3. Pump: Screens should be used to protect the pump and prevent clogging. Use 16 mesh or coarser screens on the suction side of the pump. DO NOT place a screen in the recirculation line. Use 50 mesh or coarser screens between the pump and boom unless directed otherwise by the sprayer manufacturer.
4. Spray Nozzles: 80° or 110° drift reducing flat fan (e.g. those with a pre-orifice or turbulence chamber) or air induction nozzles are recommended. Use 50 mesh or coarser nozzle screens or as recommended by the nozzle manufacturer. DO NOT use flood type nozzles, controlled droplet application equipment, spray foils or hollow cone nozzles.
5. Pressure: As recommended by the nozzle manufacturer to achieve no finer than ASABE 572.1 medium sized droplets.
6. Apply at uniform speed and avoid overlapping. Shut off spray boom while starting, turning, slowing or stopping to avoid potential crop injury from over application.

### 10.2.4 Equipment Clean-Up

To avoid subsequent injury to other crops, thoroughly clean application equipment immediately after spraying each day. Ensure that all traces of the product are removed. Do not allow residue to dry in spray tank. Do not allow solution to remain in lines or tank overnight.

When using tank mixes, consult the tank-mix partner label for additional clean-up instructions. The following recommendations are provided:

1. Drain and flush tank walls, boom and all hoses for ten minutes with a clean water/detergent mixture. Rinse with clean water. **DO NOT** clean application equipment near desirable vegetation, wells or other water sources.
2. Remove all nozzles and screens and wash separately.
3. Dispose of all rinsate in accordance with provincial regulations.

## 10.3 Aerial Application

### 10.3.1 General Information

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. Reduce drift caused by turbulent wingtip vortices. Nozzle distribution along the spray boom length MUST NOT exceed 65% of the wing- or rotorspan.

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 marking devices.

Aerial application is not recommended where wetlands or wildlife cover might be oversprayed. Avoid spray drift onto adjacent crops, shelter belts and wildlife cover. Avoid overspraying or drift onto sloughs.

Since herbicide application may damage the habitat of migratory birds and other wildlife species, do not use aerial application in fields where wetlands or other good wildlife cover might be oversprayed; this includes sloughs and dry slough margins in western Canada. Use ground sprayers and leave an unsprayed margin of 15 m around the border of all sloughs.

Refer to the Spray Buffer Zones Section for more information on specific spray buffer zones requirement.

### 10.3.2 Use Precautions

Apply only when meteorological conditions at the treatment site allow for complete and even crop 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.

### 10.3.3 Product Specific Precautions

Read and understand the entire label before opening this product. If you have questions, call the manufacturer at 1-87-SYNGENTA (1-877-964-3682) 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:

### 10.3.4 Mixing Instructions

Mixing this product directly in the aircraft hopper **IS NOT** recommended. The use of chemical handling or managing equipment to load the hopper **IS** recommended. This product **MAY BE** inducted into a hopper which is prefilled with water or when the product and water are mixed prior to entering the hopper. This product **MAY BE** batch mixed and pumped into the hopper. In all cases the chemical handling equipment and hopper interior must be clean prior to use.

**NOTE:** Craven may be inducted or batch mixed.

Follow the mixing order outlined below:

1. Pump water into the hopper to at least  $\frac{1}{4}$  to  $\frac{1}{2}$  of the desired spray volume. Engage hopper circulation, if possible.
2. Induct or thoroughly batch mix Craven.
3. Pump batch mixed into the hopper.
4. Finish filling the hopper with water.
5. If it was not possible to engage hopper agitation in Step 1, do so as soon as possible once airborne.



6. Spray the pesticide suspension the same day as mixing.
7. Do not mix, load or clean equipment where there is a potential to contaminate wells or aquatic systems.

### 10.3.5 Spraying Instructions

1. Water Volume: Apply in a minimum spray volume of 45 L/ha OR the volume given in the crop and pest specific instructions tabulated below, whichever is LARGER.
2. Spray Nozzles: Use only ASAE S572.1 medium or coarser nozzles.
3. Pressure: As recommended by the nozzle manufacturer to achieve ASAE S572.1 medium or coarse sized droplets.
4. Ensure hopper agitation is engaged whenever possible during flight.

Coarse sprays are less likely to drift, therefore, avoid combinations of pressure and nozzle type that will result in overly fine particles (mist). **DO NOT** apply during periods of dead calm or when wind velocity and direction pose a risk of spray drift. **DO NOT** spray when the wind is blowing towards a nearby sensitive crop, garden, terrestrial habitat (such as shelter-belt) or aquatic habitat.

### 10.3.6 Equipment Clean-Up

#### Before Spraying:

- Prior to using Craven, ensure that the hopper, chemical handling equipment, lines and filter are thoroughly cleaned.

#### After Spraying:

- Thoroughly clean application equipment immediately after spraying. **DO NOT** allow Craven residue to dry within application equipment.
- The following recommendations are provided:
  1. Drain and flush tank walls, boom and all hoses for ten minutes with a clean water/detergent mixture, for example a non-ionic surfactant at a rate of 60 mL per 100 L.
  2. Rinse with clean water. **DO NOT** clean application equipment near desirable vegetation, wells or other water sources.
  3. Remove all nozzles and screens and wash separately.
  4. Dispose of all rinsate in accordance with provincial regulations.

## 10.4 Spray Buffer Zones

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

The spray 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:		
		Aquatic Habitat of Depths:		Terrestrial Habitat
		Less than 1 m	Greater than 1 m	
Field Sprayer	<b>For Desiccation</b>			
	Crop Subgroup 6C [bean ( <i>Lupinus</i> spp.) includes grain lupin, sweet lupin, white lupin and white sweet lupin)]; [bean ( <i>Phaseolus</i> spp.) includes field bean, kidney bean (red & white), lima bean (dry), navy bean, pinto bean, tepary bean)]; and [bean ( <i>Vigna</i> spp.) includes adzuki bean, blackeyed pea, catjang, cowpea, Crowder pea, moth bean, mung bean, rice bean, southern pea, urd bean)], broad (fava) bean ( <i>Vicia faba</i> ), chickpea ( <i>Cicer arietinum</i> ), guar ( <i>Cyamopsis tetragonoloba</i> ), lablab bean ( <i>Lablab purpureus</i> ), lentil ( <i>Lens esculenta</i> ), pea ( <i>Pisum</i> spp.) (includes field pea), and pigeon pea ( <i>Cajanus cajan</i> ), canola, flax (including low linolenic acid varieties), mustard (condiment type only), sunflower, , legume seed crops (alfalfa, birdsfoot trefoil, red clover and white clover)	5	3	3
	<b>For Weed Control</b>			
	Oats	5	3	3
	Vegetable and field crops, fruit, non-cropland (including rights-of-way for transportation or utility corridors, airports, wasteland, garbage dumps and industrial parks),	10	5	5
<b>For Vine killing</b>				
Potato	10	5	5	

Method of Application	Crop	Buffer Zones (metres) Required for the Protection of:			
		Aquatic Habitat of Depths:		Terrestrial Habitat	
		Less than 1 m	Greater than 1 m		
Aerial	<b>For Desiccation</b>				
	Crop Subgroup 6C [bean ( <i>Phaseolus</i> spp.) includes field bean, kidney bean (red & white), lima bean (dry), navy bean, pinto bean, tepary bean)] and [bean ( <i>Vigna</i> spp.) includes adzuki bean, blackeyed pea, catjang, cowpea, Crowder pea, moth bean, mung bean, rice bean, southern pea, urd bean)], broad (fava) bean ( <i>Vicia faba</i> ), chickpea ( <i>Cicer arietinum</i> ), guar ( <i>Cyamopsis tetragonoloba</i> ), lablab bean ( <i>Lablab purpureus</i> ), lentil ( <i>Lens esculenta</i> ), pea ( <i>Pisum</i> spp.) (includes field pea), and pigeon pea ( <i>Cajanus cajan</i> ), canola, flax (including low linolenic acid varieties), mustard (condiment type only), sunflower, legume seed crops (alfalfa, birdsfoot trefoil, red clover and white clover)	Fixed wing	150	80	90
		Rotary wing	100	55	70
	<b>For Vine killing</b>				
	Potato	Fixed wing	200	100	100
		Rotary wing	125	65	80

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

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

## 11.0 CROP USE DIRECTIONS

### 11.1 Crop Subgroup 6C - Peas

<b>CROPS</b>	Peas - field or dry, Pigeon pea
<b>CROP CONDITION</b>	Full canopy, few weeds (normal crop)
<b>RATE</b>	Ground: 1.25 L/ha – 1.7 L/ha Aerial: 1.7 L/ha
<b>APPLICATION VOLUME</b>	Ground: 225 L/ha – 550 L/ha Aerial: at least 45 L/ha
<b>CROP CONDITION</b>	Very dense canopy and/or weedy crop
<b>RATE</b>	Ground: 1.7 L/ha Aerial: 2.3 L/ha
<b>APPLICATION VOLUME</b>	Ground: 225 L/ha – 550 L/ha Aerial: at least 45 L/ha
<b>NOTES</b>	<p>Apply Craven when bottom pods of the majority of the plants are ripe &amp; dry with the seeds detached from the pods. Seed in less mature pods will split when squeezed.</p> <p>This treatment does not mature peas. Because pea swaths are at considerable risk to wind losses, straight cutting is preferred. Timing is vital as premature desiccation will result in yield loss: crops should be closely monitored. Commence combining when the peas test "dry".</p> <p>Craven applied to peas under prolonged drought stress will provide slower and less effective desiccation compared to applications made under normal growing conditions. If prolonged drought stress conditions exist prior to application, use the highest registered rate of Craven for peas as well as the highest registered water volume to obtain the best activity.</p> <p>With indeterminate varieties, apply Craven when the lower pods of most plants are ripe, dry, translucent and shrunken, with enclosed seeds detached from the pods. Middle pods will be somewhat shrunken and leathery, and the seed will split when squeezed. Desiccation will dry out upper pods and green plant growth, leaving bottom and middle pods with the highest quality seed.</p> <p>With determinate varieties, Craven should be applied when the top and upper middle pods are somewhat shrunken and leathery and seeds in these pods split when squeezed. The lower middle and bottom pods are ripe and dry, translucent and shrunken, with seeds enclosed in these pods detached.</p> <p>Ground sprayer application will facilitate use of higher water volumes and provide more complete coverage. Aerial application may be used where the crop is too dense or the ground too soft for ground rigs. Ensure aircraft is fitted to apply uniform spray coverage.</p>

**11.2 Crop Subgroup 6C - Lentils**

<b>CROPS</b>	Lentils
<b>CROP CONDITION</b>	Full canopy, few weeds (normal crop)
<b>RATE</b>	Ground: 1.25 L/ha – 1.7 L/ha Aerial: 1.7 L/ha
<b>APPLICATION VOLUME</b>	Ground: 225 L/ha – 550 L/ha Aerial: at least 45 L/ha
<b>CROP CONDITION</b>	Very dense canopy and/or weedy crop
<b>RATE</b>	Ground: 1.7 L/ha Aerial: 2.3 L/ha
<b>APPLICATION VOLUME</b>	Ground: 225 L/ha – 550 L/ha Aerial: at least 45 L/ha
<b>NOTES</b>	<p>Apply Craven at the time swathing would normally commence. This is when the lowermost pods are yellow-brown and seeds rattle. Ground sprayer application will facilitate use of higher water volumes and provide more complete coverage. Aerial application may be used where the crop is too dense or the ground too soft for ground rigs.</p> <p>Craven applied to lentils under prolonged drought stress, rainfall, cool temperatures and high humidity will provide slower and less effective desiccation compared to applications made under normal growing conditions. If these conditions exist prior to application, use the highest registered rate of Craven for lentils as well as the highest registered water volume to obtain the best activity. Harvest delays should be expected.</p>

**11.3 Crop Subgroup 6C - Chickpeas**

<b>CROPS</b>	Chickpeas
<b>CROP CONDITION</b>	Full canopy, few weeds (normal crop)
<b>RATE</b>	Ground: 1.25 L/ha – 1.7 L/ha Aerial: 1.7 L/ha
<b>APPLICATION VOLUME</b>	Ground: 225 L/ha – 550 L/ha Aerial: at least 45 L/ha
<b>CROP CONDITION</b>	Heavy crop stand and/or weedy crop and/or heavy vine regrowth
<b>RATE</b>	Ground: 1.7 L/ha
<b>APPLICATION VOLUME</b>	Ground: 225 L/ha – 550 L/ha
<b>NOTES</b>	<p>This treatment does not mature chickpeas. Chickpea swaths are at risk to wind loss, and straight cutting is preferred. Timing is vital as premature desiccation will result in yield and quality loss. Crops should be closely monitored for correct stage of application. Application of Craven may cause the small stem attaching the pod to the chickpea plant to become brittle and lead to increased pod loss. Wait 4 to 7 days before combining the crop. It may be advantageous to harvest, and bin separately, chickpea grain from late maturing areas of the field.</p> <p>For Desi type, apply at the time swathing would normally commence, when the majority of plants are yellow and most pods are mature and seeds have turned from green to yellow or brown. Upper part of plant may still be green.</p> <p>For Kabuli type, apply when the majority of plants and pods are ripe and dry with seeds turned from green to white or tan, and detached from the pods. Dry down is less complete in Kabuli type due to its thick pod wall.</p> <p>Ground sprayer application will facilitate use of higher water volumes and provide more complete coverage. Aerial application may be used with aircraft fitted to apply uniform spray coverage.</p> <p>Germination of seed is not affected by Craven desiccation.</p>

**11.4 Canola**

<b>CROPS</b>	Canola
<b>CROP CONDITION</b>	Full canopy, few weeds (normal crop)
<b>RATE</b>	Ground: 1.25 L/ha – 1.7 L/ha Aerial: 1.7 L/ha
<b>APPLICATION VOLUME</b>	Ground: 225 L/ha – 550 L/ha Aerial: at least 45 L/ha
<b>CROP CONDITION</b>	Very dense canopy and/or weedy crop
<b>RATE</b>	Ground: 1.7 L/ha Aerial: 2.3 L/ha
<b>APPLICATION VOLUME</b>	Ground: 225 L/ha – 550 L/ha Aerial: at least 45 L/ha
<b>NOTES</b>	<p>Apply when 90% or more of the seed has turned brown; application of Craven prior to this stage can result in high levels of green seed in the sample.</p> <p>Combine no later than 14 days after application.</p> <p>This treatment does not mature canola. Craven is an effective desiccant aiding in the harvest of canola. Speed of pod and stem dry down will vary depending on spray coverage, environmental conditions and plant growth stage at application; however pod and stem kill will take place 7-10 days after application.</p> <p>Ground sprayer application will facilitate use of higher water volumes and provide more complete coverage. Aerial application may be used with aircraft fitted to apply uniform spray coverage.</p> <p>Commence harvest as soon as the crop can be combined since significant yield loss in standing desiccated canola crops, particularly Argentine varieties, can occur due to pod drop and pod shattering. This yield loss can be greater if harvest of the standing desiccated crop is delayed or when unfavourable weather conditions including high winds and heavy rainfall occur.</p> <p>Germination of seed is not affected by Craven desiccation.</p>

**11.5 Soybeans**

<b>CROPS</b>	Soybeans
<b>CROP CONDITION</b>	Full canopy, few weeds (normal crop)
<b>RATE</b>	Ground: 1.25 L/ha – 1.7 L/ha Aerial: 1.7 L/ha – 2.1 L/ha
<b>APPLICATION VOLUME</b>	Ground: 225 L/ha – 550 L/ha Aerial: at least 45 L/ha
<b>CROP CONDITION</b>	Heavy crop stand and/or weedy crop and/or heavy vine regrowth
<b>RATE</b>	Ground: 1.7 L/ha Aerial: 2.3 L/ha
<b>APPLICATION VOLUME</b>	Ground: 225 L/ha – 550 L/ha Aerial: at least 45 L/ha
<b>NOTES</b>	<p>Spray at 80-90% natural leaf defoliation and at least 80% of the pods have turned yellow. Consider pod turn only when determining application time in years when heavy vine growth is anticipated.</p> <p>Ground sprayer application will facilitate use of higher water volumes and provide more complete coverage. Aerial application may be used with aircraft fitted to apply uniform spray coverage. Desiccation of weeds is completed in a week. THIS TREATMENT DOES NOT MATURE SOYBEANS NOR DOES IT LOWER MOISTURE CONTENT OF SOYBEANS. Direct combine or pull soybeans when they are considered ready.</p> <p>Craven applied to soybeans under prolonged drought stress will provide slower and less effective desiccation compared to applications made under normal growing conditions. If prolonged drought stress conditions exist prior to application, use the highest registered rate of Craven for soybeans as well as the highest registered water volume to obtain the best activity.</p>



**11.6 Crop Subgroup 6C - Beans**

<b>CROPS</b>	Bean ( <i>Phaseolus</i> spp.) (includes field bean, kidney bean (red & white), lima bean (dry), navy bean, pinto bean, tepary bean), Bean ( <i>Vigna</i> spp.) (includes adzuki bean, blackeyed pea, catjang, cowpea, Crowder pea, moth bean, mung bean, rice bean, southern pea, urd bean), Lablab bean, Guar
<b>CROP CONDITION</b>	Full canopy, few weeds (normal crop)
<b>RATE</b>	Ground: 1.25 L/ha – 1.7 L/ha Aerial: 1.7 L/ha – 2.1 L/ha
<b>APPLICATION VOLUME</b>	Ground: 225 L/ha – 550 L/ha Aerial: at least 45 L/ha
<b>CROP CONDITION</b>	Heavy crop stand and/or weedy crop and/or heavy vine regrowth
<b>RATE</b>	Ground: 1.7 L/ha Aerial: 2.3 L/ha
<b>APPLICATION VOLUME</b>	Ground: 225 L/ha – 550 L/ha Aerial: at least 45 L/ha
<b>NOTES</b>	<p>Spray at 80-90% natural leaf defoliation and at least 80% of the pods have turned yellow. Consider pod turn only when determining application time in years when heavy vine growth is anticipated.</p> <p>Ground sprayer application will facilitate use of higher water volumes and provide more complete coverage. Aerial application may be used with aircraft fitted to apply uniform spray coverage. Desiccation of weeds is completed in a week. THIS TREATMENT DOES NOT MATURE BEANS NOR DOES IT LOWER MOISTURE CONTENT OF BEANS. Direct combine or pull beans when they are considered ready. Combining of dry beans and Adzuki beans can often be done the day of pulling; however, this is dependent on the condition of the beans.</p> <p>Craven applied to beans under prolonged drought stress will provide slower and less effective desiccation compared to applications made under normal growing conditions. If prolonged drought stress conditions exist prior to application, use the highest registered rate of Craven for beans as well as the highest registered water volume to obtain the best activity.</p>

**11.7 Crop Subgroup 6C - Sweet White Lupins**

<b>CROPS</b>	Sweet White Lupins, Bean ( <i>Lupinus</i> spp.) (includes grain lupin, sweet lupin, white lupin and white sweet lupin)
<b>CROP CONDITION</b>	Full canopy, few weeds (normal crop)
<b>RATE</b>	Ground: 2.3 L/ha
<b>APPLICATION VOLUME</b>	Ground: 225 L/ha – 550 L/ha
<b>NOTES</b>	<p>Spray when the pods are brown and the internal seed (endosperm) is yellow when cut.</p> <p>DO NOT APPLY BY AIR.</p> <p>Apply Craven once per season for pre-harvest desiccation. Wait at least 7 days before harvesting. Do not add wetters, spreaders or stickers to the spray solution. Ground rig application only. Ground spraying may be done with any standard boom sprayer.</p>

**11.8 Flax**

<b>CROPS</b>	Flax (including low linolenic acid varieties)
<b>CROP CONDITION</b>	Full canopy, few weeds (normal crop)
<b>RATE</b>	Ground: 1.25 L/ha – 1.7 L/ha Aerial: 1.7 L/ha
<b>APPLICATION VOLUME</b>	Ground: 225 L/ha – 550 L/ha Aerial: at least 45 L/ha
<b>CROP CONDITION</b>	Very dense canopy and/or weedy crop
<b>RATE</b>	Ground: 1.7 L/ha Aerial: 2.3 L/ha
<b>APPLICATION VOLUME</b>	Ground: 225 L/ha – 550 L/ha Aerial: at least 45 L/ha
<b>NOTES</b>	<p>Spray when crop is at 75% boll turn stage (normal swathing time) and NOT before 75% boll turn.</p> <p>Harvest when flaxseed tests 'dry'.</p> <p>Craven is an effective desiccant aiding in the harvest of flax (including low linolenic acid varieties). Desiccation reduces the period of time from maturity to harvest, reduces wear and tear on harvesting equipment, reduces harvest time, decreases the moisture content of the seed and eliminates the need for swathing.</p> <p>Ground sprayer application will facilitate use of higher water volumes and provide more complete coverage.</p> <p>Aerial application may be used where the crop is too dense or the ground too soft for ground rigs. Ensure aircraft is fitted to apply uniform spray coverage.</p> <p>Germination of seed is not affected by Craven desiccation of the crop.</p>

**11.9 Mustard**

<b>CROPS</b>	Mustard (condiment type only)
<b>CROP CONDITION</b>	Full canopy, few weeds (normal crop)
<b>RATE</b>	Ground: 1.25 L/ha – 1.7 L/ha Aerial: 1.7 L/ha
<b>APPLICATION VOLUME</b>	Ground: 225 L/ha – 550 L/ha Aerial: at least 45 L/ha
<b>CROP CONDITION</b>	Very dense canopy and/or weedy crop
<b>RATE</b>	Ground: 1.7 L/ha Aerial: 2.3 L/ha
<b>APPLICATION VOLUME</b>	Ground: 225 L/ha – 550 L/ha Aerial: at least 45 L/ha
<b>NOTES</b>	<p>Spray when crop is at 75% seed turn (green to brown) stage.</p> <p>Combine no later than 14 days after application.</p> <p>Do not apply when the crop is immature or past the recommended stage of maturity. Commence combining no later than 14 days after application. NOTE: Pod drop and some shattering can occur in high winds in the standing crop.</p> <p>Ground sprayer application will facilitate use of higher water volumes and provide more complete coverage. Aerial application may be used where the crop is too dense or the ground too soft for ground rigs. Apply by means of an aircraft fitted to apply uniform spray coverage.</p>

**11.10 Sunflowers**

<b>CROPS</b>	Sunflowers
<b>CROP CONDITION</b>	Full canopy, few weeds (normal crop)
<b>RATE</b>	Ground: 1.25 L/ha – 1.7 L/ha Aerial: 1.7 L/ha
<b>APPLICATION VOLUME</b>	Ground: 225 L/ha – 550 L/ha Aerial: at least 45 L/ha
<b>CROP CONDITION</b>	Very dense canopy and/or weedy crop
<b>RATE</b>	Ground: 1.7 L/ha Aerial: 2.3 L/ha
<b>APPLICATION VOLUME</b>	Ground: 225 L/ha – 550 L/ha Aerial: at least 45 L/ha
<b>NOTES</b>	<p>Spray when seeds reach maturity (20-50% moisture in the seed and hull).</p> <p>Craven is an effective desiccant aiding in the harvest of sunflower seed for seed, oil production and confectionery use. If specialized high clearance equipment is available, ground sprayer application will facilitate use of higher water volumes and provide more complete coverage. Aerial application may be used where the crop is too tall or the ground too soft for ground rigs. Do not apply when the crop is immature.</p> <p>Combine 15-20 days after spraying.</p>

**11.11 Legumes**

<b>CROPS</b>	Legumes (alfalfa, birdsfoot trefoil, red clover and white clover) Seed Crops
<b>CROP CONDITION</b>	Full canopy and/or weedy crop
<b>RATE</b>	Ground: 1.70 L/ha – 2.7 L/ha Aerial: 1.7 L/ha – 2.7 L/ha
<b>APPLICATION VOLUME</b>	Ground: 225 L/ha – 550 L/ha Aerial: at least 45 L/ha
<b>CROP CONDITION</b>	Very dense canopy and/or weedy crop and/or secondary regrowth
<b>RATE</b>	Ground: 2.7 L/ha Aerial: 2.7 L/ha
<b>APPLICATION VOLUME</b>	Ground: 225 L/ha – 550 L/ha Aerial: at least 45 L/ha
<b>NOTES</b>	<p>Seed crops only. Apply when the majority of the pods of individual plants are ripe but before they shatter. To prevent pod shattering and loss of seed the interval between spraying and harvest should not exceed 7 days.</p> <p>Birdsfoot trefoil plants under drought or disease stress may be subject to damage when desiccated with Craven. Do not use Craven if a residual herbicide has been used on the legumes within the past 12 months.</p> <p>Ground sprayer application will facilitate use of higher water volumes and provide more complete coverage. Aerial application may be used where the crop is too dense or the ground too soft for ground rigs. Ensure aircraft is fitted to apply uniform spray coverage.</p>

**11.12 Oats**

<b>CROPS</b>	Oats (for Corn Spurry Control)
<b>CROP CONDITION</b>	Corn spurry less than 8 cm high
<b>RATE</b>	Ground: 0.9 L/ha
<b>APPLICATION VOLUME</b>	Ground: 225 L/ha – 335 L/ha
<b>CROP CONDITION</b>	Corn spurry more than 8 cm high
<b>RATE</b>	Ground: 1.25 L/ha
<b>APPLICATION VOLUME</b>	Ground: 225 L/ha – 335 L/ha
<b>NOTES</b>	<p>Do not use wetters, spreaders or stickers.</p> <p>Apply when oats are 8-15 cm in height.</p> <p>DO NOT APPLY BY AIR.</p> <p>Craven, when applied by ground sprayer as recommended will burn corn spurry and give a temporary burning of the exposed oats leaves, but the plants quickly recover. Do not use any surfactant.</p>

**11.13 Potato – Vine Killing**

<b>CROPS</b>	Potato – Vine Killing
<b>CROP CONDITION</b>	Top growth heavy or weedy field
<b>RATE</b>	Ground: 3.5 L/ha
<b>APPLICATION VOLUME</b>	Ground: 550 L/ha – 1100 L/ha
<b>CROP CONDITION</b>	Top growth light, little weed growth <u>or</u> top growth heavy and in early stage of maturity
<b>RATE</b>	Ground: 1.7 L/ha – 2.3 L/ha
<b>APPLICATION VOLUME</b>	Ground: 550 L/ha – 1100 L/ha
<b>CROP CONDITION</b>	Top growth heavy <u>or</u> top growth light and weedy field (for Eastern Canada only)
<b>RATE</b>	Ground: 1.25 L/ha – 2.3 L/ha PLUS 1.25 L/ha
<b>APPLICATION VOLUME</b>	Ground: 550 L/ha – 1100 L/ha
<b>CROP CONDITION</b>	All top growth conditions. No geographic limitation.
<b>RATE</b>	Aerial: 1.7 L/ha – 2.3 L/ha PLUS 1.25 L/ha
<b>APPLICATION VOLUME</b>	Aerial: at least 45 L/ha
<b>CROP CONDITION</b>	Top growth fully mature, little or no weeds
<b>RATE</b>	Ground: 1.25 L/ha
<b>APPLICATION VOLUME</b>	Ground: 550 L/ha – 1100 L/ha (add 1 L non-ionic surfactant/1000 L or 2.5 L LI 700/ 1000 L in the prairie provinces)

<b>NOTES</b>	<p>DO NOT apply to drought stressed potatoes.</p> <p>Use of an adjuvant such as a non-ionic surfactant or LI 700 is not recommended for this crop, except as noted.</p> <p>Second application 4-6 days after first application at normal top killing time.</p> <p>Use higher rate in the first application on denser or immature vines. A fungicide may be added.</p> <p>1.25 L rate may require more than 10-14 days to give a complete kill.</p> <p>Do not use 1.25 L rate in BC.</p> <p>Craven is an effective potato vine killer of seed and table potatoes. Leaf kill is rapid (3-4 days) with kill of stems taking place gradually (10-14 days) giving conditions that closely approach 'natural' maturity. At recommended rates of application, Craven also desiccates weeds that are present, and thus speeds and eases the harvesting operations. By stopping growth of potato tops the incidence of tuber rot is greatly reduced.</p> <p>Best results are obtained after growth has passed its peak and adequate skin set has been established. Poor results may be obtained when plants are sprayed while growing actively. NOTE: Active growth of potato tops can continue into late season in part or all of a field if growth has been delayed for any reason during the growing period. Do not harvest potatoes within 24 hours of Craven application.</p> <p>Do not apply Craven during periods of extreme weather conditions. Do not apply Craven during drought, particularly when the soil is so dry that the tops wilt during the day. After drought conditions, wait for at least three days after the soil has been thoroughly moistened by rain or irrigation. During extremely wet conditions, particularly if the soil is water logged and algal colonies are present on the soil as an indicator of excessive moisture, wait until soil conditions are drier and more closely resemble harvesting conditions. Do not use Craven if tops have been damaged by a roto-beater or other similar mechanical top beater. Do not use wetters, spreaders or stickers except as directed for the 1.25 L rate in the prairie provinces. When potato tops are especially dense or heavy weed growth is present, use 1100 L of water/ha.</p>
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**11.14 Stale Seedbed**

<b>CROPS</b>	Stale Seedbed
<b>CROP CONDITION</b>	Small weeds (3-5 cm high)
<b>RATE</b>	Ground: 2.3 L/ha
<b>APPLICATION VOLUME</b>	Ground: at least 300 L/ha
<b>CROP CONDITION</b>	Large weeds (greater than 5 cm high)
<b>RATE</b>	Ground: 4.6 L/ha
<b>APPLICATION VOLUME</b>	Ground: at least 300 L/ha
<b>NOTES</b>	<p>Stale Seedbed - Pre-emergent to crop, post emergent weeds.</p> <p>Burn off weeds either prior to, or after seeding, but 3 days before crop emergence.</p> <p>DO NOT APPLY BY AIR.</p> <p>For weed control in beans (all types), beets, carrots, cole crops, corn, onions, peas, cucumbers, potatoes, soybeans and turnips, prepare a stale seedbed by early cultivation (at least two to four weeks in advance of seeding) to stimulate weed growth. Seed without further cultivation and with a minimum of soil disturbance.</p> <p>Apply by ground sprayer to burn off emerged weeds either prior to seeding or after seeding, but three days before crop emergence.</p>

**11.15 Inter-row Directed Weeding**

<b>CROPS</b>	Inter-row directed weeding
<b>RATE</b>	Ground: 2.3 L/ha – 4.6 L/ha
<b>APPLICATION VOLUME</b>	Ground: 900 L/ha – 1100 L/ha
<b>NOTES</b>	<p>DO NOT APPLY BY AIR.</p> <p>For weed control between the rows after crop and weed emergence, use suitable protective equipment and spray nozzle to protect crop from spray.</p>

**11.16 Perennial Grass Suppression Under Apple Trees**

<b>CROPS</b>	Perennial Grass Suppression Under Apple Trees
<b>RATE</b>	Ground: 4.6 L/ha
<b>APPLICATION VOLUME</b>	Ground: 225 L/ha – 675 L/ha
<b>NOTES</b>	DO NOT APPLY BY AIR.

**11.17 Non-Crop Land**

<b>CROPS</b>	Non-Crop Land (Rights-of-way for transportation or utility corridors, airports, wasteland, garbage dumps and industrial parks)
<b>RATE</b>	Ground: 2.3 L/ha - 4.6 L/ha
<b>APPLICATION VOLUME</b>	Ground: 550 L/ha – 1100 L/ha
<b>NOTES</b>	<p>Use higher rates and higher volume of water for dense weed growth. Thoroughly wet foliage.</p> <p>DO NOT APPLY BY AIR.</p> <p>For the top kill of weeds, Craven will provide a rapid top-kill of weeds and grasses when applied as a foliar spray. Craven may be added to tank mixes of certain soil sterilants where immediate top kill and long term soil sterilization is required. The combined use with soil sterilants should be based on previous experimental experience, and recommendations on the label of the residual herbicide.</p>

**12.0 MINOR USES****NOTE TO USER: READ THE FOLLOWING BEFORE USING THIS PRODUCT FOR THE INDICATED SPECIAL USE APPLICATIONS**

The DIRECTIONS FOR USE for the uses described in this section of the label were developed by persons other than Syngenta Canada Inc. under the User Requested Minor Use Label Expansion program. For these uses, Syngenta Canada Inc. has not fully assessed performance (efficacy) and/or crop tolerance (phytotoxicity) under all environmental conditions or for all crop varieties when used in accordance with the label. The user should test the product on a small area first, under local conditions and using standard practices, to confirm the product is suitable for widespread application.



<b>12.1 Faba (Fava) Broad Beans</b>	
<b>CROPS</b>	Faba (Fava) Broad Beans
<b>CROP CONDITION</b>	Use higher spray rates for dense canopies and/or weedy crops
<b>RATE</b>	Ground: 1.25 L/ha – 1.7 L/ha Aerial: 1.7 L/ha – 2.3 L/ha
<b>APPLICATION VOLUME</b>	Ground: 225 L/ha – 550 L/ha Aerial: at least 45 L/ha
<b>NOTES</b>	<p>Apply 1 application only for crop desiccation.</p> <p>Apply when the majority of the plants are ripe and dry. Pods will be fully filled and the bottom pods will be tan or black in colour.</p> <p>For ground or aerial application, use a non-ionic surfactant as a wetting and spreading agent, at a rate of 1 L for each 1000 L of spray mixture.</p> <p>Observe a 4 – 10 day pre-harvest interval (PHI).</p> <p>Spray pressure should be increased with high clearance sprayers (90 – 100 psi) to ensure adequate coverage of Craven in the lower stem area. Ground sprayer application will facilitate use of higher water volumes and provide more complete coverage. Aerial application may be used with aircraft fitted to apply uniform spray coverage. Desiccation of weeds is completed in a week. <b>THIS TREATMENT DOES NOT MATURE BEANS NOR DOES IT LOWER MOISTURE CONTENT OF BEANS.</b> Craven applied to beans under prolonged drought stress will provide slower and less effective desiccation compared to applications made under normal growing conditions. If prolonged drought stress conditions exist prior to application, use the highest registered rate of Craven for beans as well as the highest registered water volume to obtain the best activity. Timing is vital as premature desiccation will result in yield loss: crops should be closely monitored.</p>

### 13.0 RESISTANCE-MANAGEMENT RECOMMENDATIONS

For resistance management, Craven is a Group 22 herbicide. Any weed population may contain or develop plants naturally resistant to Craven and other Group 22 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 Craven or other Group 22 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.

For further information or to report suspected resistance, contact company representatives at 1-87-SYNGENTA (1-877-964-3682) or at [www.syngenta.ca](http://www.syngenta.ca).

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