

<b>GROUP</b>	<b>9</b>	<b>HERBICIDE</b>
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# Catena Herbicide

**COMMERCIAL**

**CAUTION EYE IRRITANT**

**REGISTRATION NO. 27199 PEST CONTROL PRODUCTS ACT**

**GUARANTEE:** Glyphosate, 360 grams acid equivalent per litre, present as isopropylamine salt.

Water Soluble Herbicide for silvicultural sites and non-crop land applications

**READ THE LABEL BEFORE USING.**

**MONSANTO CANADA INC.**

900 – One Research Road

Winnipeg, Manitoba R3T 6E3

(204) 985-1000

1-800-667-4944

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(FRANÇAIS AU VERSO)

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# Catena Herbicide

## 1.0 PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN.  
MAY CAUSE EYE IRRITATION.  
HARMFUL IF SWALLOWED.

Avoid contact with eyes or prolonged contact with skin.  
For good hygiene practice, wear a long-sleeved shirt, long pants, and chemical-resistant gloves during mixing, loading, clean-up or repair activity.

## 1.1 FIRST AID

**IF IN EYES, IMMEDIATELY** flush with plenty of water for at least 15 minutes. Call a physician or contact a poison control center **IMMEDIATELY**.

**IF ON SKIN, IMMEDIATELY** flush with plenty of water. Remove contaminated clothing. Wash clothing before re-use.

**IF SWALLOWED**, this product will cause gastro-intestinal tract irritation.

**IMMEDIATELY** dilute by swallowing water or milk. Call a physician or contact a poison control center **IMMEDIATELY**.

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

## 1.2 TOXICOLOGICAL INFORMATION

Treat symptomatically.

## 1.3 NOTICE

Read NOTICE before buying or using. If notice terms are not acceptable, return at once unopened.

Not for reformulation or repackaging.

**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.

## 1.4 ENVIRONMENTAL HAZARDS

Avoid direct applications to any body of water. Do not contaminate water by disposal of waste or cleaning of equipment.

## **1.5 PHYSICAL OR CHEMICAL HAZARDS**

Spray solutions of this product should be mixed, stored and applied only in stainless steel, aluminum, fiberglass, plastic and plastic-lined steel containers. **DO NOT MIX, STORE OR APPLY THIS PRODUCT OR SPRAY SOLUTIONS OF THIS PRODUCT IN GALVANIZED STEEL OR UNLINED STEEL (EXCEPT STAINLESS STEEL) CONTAINERS OR SPRAY TANKS.** This product or spray solutions of this product react with such containers and tanks to produce hydrogen gas which may form a highly combustible gas mixture. This gas mixture could flash or explode, causing serious personal injury, if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source.

## **1.6 STORAGE AND DISPOSAL**

Store products in original container only.  
Avoid contamination of seed, feed, and foodstuffs.  
Soak up small amounts of spill with absorbent clays.

### **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.

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

#### **RETURNABLE CONTAINERS:**

Do not reuse container for any other purpose. For disposal, this empty container may be returned to the point of purchase (distributor/dealer).

#### **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 the 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 the clean-up of spills.

## **1.7 EMERGENCY NUMBERS**

**In case of an emergency involving this product**, call Monsanto collect, day or night:

Accident/Spills/Medical Emergency ..... (314) 694-4000  
 Or .....1-800-332-3111  
 Or CANUTEC .....(613) 996-6666

## **DIRECTIONS FOR USE**

### **2.0 GENERAL INFORMATION**

Catena Herbicide controls undesirable vegetation listed on this label when applied as directed under conditions described.

This product may be applied using aerial and ground spray or wiper equipment for silvicultural site preparation and industrial rights-of-way, and ground spray or wiper equipment for roadside vegetation management, turf grass renovation, recreational, public areas and control of unwanted vegetation prior to the establishment of nurseries.

**NOTE: This product is not recommended for use as an over-the-top broadcast spray or a directed spray for conifer or deciduous release treatments in forest and woodland management, in forest tree nurseries or in Christmas tree plantations. Such applications with this product would result in severe injury to the crop trees.**

For control of herbaceous weeds, woody brush, and trees, see the “**Vegetation Controlled**” section of this label.

For specific site preparation instructions, see the “**Site Preparation**” section of this label. Treatments should not be made to trees or brush after fall leaf drop has begun.

For specific forest tree planting nursery instructions, see the “**Forest Tree Planting Nurseries**” section of this label.

For specific injection and cut stump application instructions, see the “**Individual Stem Control**” section of this label for information on how to properly apply this product.

For specific instructions on use of wick or wiper applicators for vegetation control, see the “**Individual Stem Control**” section of this label.

Catena herbicide, a water soluble liquid, mixes readily with water for application as a foliage spray for the control or destruction of most herbaceous plants. It may be applied through most standard industrial or field type sprayers after dilution and thorough mixing with water in accordance with the booklet instructions.

This herbicide moves through the plant from the point of foliage contact to and into the root system. Visible effects on most annual weeds occur within 2 to 4 days but on most perennial weeds may not occur until 7 to 10 days. Extremely cool or cloudy weather at treatment time may slow down activity of this product and delay visual effects of control. Visible effects are a gradual wilting and yellowing of the plant which advances to complete browning of above ground growth and deterioration of underground plant parts.

Delay application until vegetation has emerged and is well developed to provide adequate leaf surface to receive the spray. Unemerged plants arising from underground rhizomes or root stocks of perennials will not be affected by the spray and will continue to grow. For this reason best control of most perennial weeds is obtained when treatment is made at late growth stages approaching maturity.

Always use the higher rate of this product per hectare within the recommended range when vegetative growth is heavy or dense, or when the vegetation is growing in an undisturbed (non-cultivated) area.

Do not treat the vegetation under poor growing conditions such as drought stress, disease or insect damage, as reduced weed control may result. Reduced results may also occur when treating weeds heavily covered with dust.

This product does not provide residual weed control. For subsequent residual weed control follow a label approved herbicide program. Read and carefully observe the cautionary statements and all other information appearing on the labels of all herbicides used.

If target vegetation has been mowed, tilled or scarified, do not treat until re-growth has reached recommended stages, as reduced effectiveness will result.

Most vegetation can be treated after the first mild frost provided leaves are still green and actively growing at the time of application. Do not apply after first damaging frost.

Rainfall occurring within 60 minutes of treatment may result in reduced effectiveness. Heavy rainfall immediately after application may wash the chemical off the foliage and a repeat treatment may be required. Do not apply if rainfall is forecast for the time of application.

Do not mix with any surfactant, pesticide, herbicide oils or any other material other than water unless specified in this booklet. For best results, spray coverage should be uniform and complete. Do not spray weed foliage to the point of run-off.

## RESISTANCE-MANAGEMENT RECOMMENDATIONS

For resistance management, Catena Herbicide is a Group 9 herbicide. Any weed population may contain or develop plants naturally resistant to Catena and other Group 9 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 Catena or other Group 9 herbicides 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.
- Herbicide use should be based on an IPM program that includes scouting, historical information related to herbicide use and crop rotation, and considers tillage (or other mechanical), cultural, biological and other chemical control practices.
- Monitor treated weed populations for resistance development.
- Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment and planting clean seed.
- Contact your local extension specialist or Monsanto Canada representative for any additional pesticide resistance-management and/or integrated management recommendations for specific target vegetation and weed biotypes.
- For further information or to report suspected resistance, contact Monsanto Canada at 1-800-667-4944 or at [www.Monsanto.ca](http://www.Monsanto.ca).

### **3.0 MIXING AND APPLICATION INSTRUCTIONS**

#### **3.1 PRECAUTIONS**

**ATTENTION: AVOID CONTACT WITH FOLIAGE, GREEN STEMS, OR FRUIT OF CROPS, DESIRABLE PLANTS AND TREES SINCE SEVERE INJURY OR DESTRUCTION MAY RESULT.**

**APPLY THESE SPRAY SOLUTIONS IN PROPERLY MAINTAINED AND CALIBRATED EQUIPMENT CAPABLE OF DELIVERING DESIRED VOLUMES.**

**AVOID DRIFT – EXTREME CARE MUST BE USED WHEN APPLYING THIS PRODUCT TO PREVENT INJURING DESIRABLE PLANTS AND CROPS.**

Do not allow spray mist to drift since even minute quantities of spray can cause severe damage or destruction to nearby crops, plants or other areas on which treatment is not intended, or may cause other unintended consequences. Apply only in wind conditions in compliance with local and/or provincial regulations. Do not apply when other climatic conditions, including lesser wind velocities, will allow drift to occur. When spraying, avoid combinations of pressure and nozzle type that will result in fine particles (mist) which are more likely to drift.

**DO NOT USE IN GREENHOUSES, REDUCED RESULTS MAY OCCUR IF WATER CONTAINING SOIL IS USED, SUCH AS WATER FROM PONDS AND UNLINED DITCHES.**

Clean sprayers and parts immediately after using this product by thoroughly flushing with water. Do not contaminate water sources by disposal of wastes or cleaning of equipment.

**NOTE:** Use of this product in any manner not consistent with this booklet may result in injury to persons, animals or crops, or other unintended consequences. Keep container closed to prevent spills and contamination.

## **MIXING AND APPLICATION EQUIPMENT INFORMATION**

### **3.2 MIXING**

This product mixes readily with water.

For ground, aerial or industrial type sprayers, fill the spray tank with one-half the required amount of water. Add the proper amount of herbicide (see “**Application Rates**” section of this booklet) and mix well before adding the remaining portion of water. Placing the filling hose below the surface of the liquid solution will prevent excessive foaming. Removing hose from tank immediately will avoid back siphoning into water source. Use of mechanical agitators may cause excessive foaming. Bypass lines should terminate at the bottom of the tank.

For use in knapsack sprayers, it is suggested that the proper amount of this herbicide be mixed with water in a larger container. Fill sprayer with the mixed solution.

### **3.3 APPLICATION INSTRUCTIONS**

**APPLY THESE SPRAY SOLUTIONS IN PROPERLY MAINTAINED AND CALIBRATED EQUIPMENT CAPABLE OF DELIVERING DESIRED VOLUMES. HAND GUN APPLICATIONS SHOULD BE PROPERLY DIRECTED TO AVOID SPRAYING DESIRABLE PLANTS.**

**AVOID DRIFT** – Drift may cause damage to any vegetation contact for which treatment is not intended. Applications in wind conditions in excess of local and/or provincial aerial spray regulations are not recommended.

To prevent injury to adjacent vegetation, appropriate buffer zones must be maintained.

Do not apply directly to any body of water populated with fish or used for domestic purposes. Do not use in areas where adverse impact on domestic water or aquatic species is likely.

### 3.3.1 APPLICATION RATES

To control or suppress herbaceous weeds, woody brush and trees, apply 3 to 12 litres of this product per hectare using aerial, ground boom or boomless, or mist blower equipment, or apply as a 1 to 2 percent solution using hand-held high volume equipment. Consult the silvicultural site preparation or non-crop land application sections for recommended rates by species.

For specific rates for injection applications, cut stump or wiper applications, see the “**Individual Stem Control**” section of this label.

### 3.3.2 AERIAL APPLICATIONS: FOR INDUSTRIAL RIGHTS OF WAY AND FORESTRY SITE PREPARATION ONLY

#### **Directions for use**

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(s) recommended for aerial application on this label in 20 to 100 litres of water per hectare. For control of perennial weeds in site preparation application using 7 to 12 litres of this product, use 50 to 100 litres of water per hectare. Where no rate for aerial application appears for the specific use, this product cannot be applied by any type of aerial equipment. As density of vegetation increases, spray volume should be increased within recommended range to ensure complete coverage.

**Ensure uniform application.** To avoid streaked, uneven or overlapped application, use appropriate marking devices, or equivalent electronic positioning systems (GPS).

#### **Use Precautions**

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

Do not apply to any body of water. Avoid drifting of spray onto any body of water or other non-target areas. Specified buffer zones should be observed.

Coarse sprays are less likely to drift, therefore, avoid combinations of pressure and nozzle type that will result in 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.

### **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 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 Monsanto Canada Custom Care Line at 1-800-667-4944 or obtain technical advice from the distributor or your provincial agricultural representative. Application of this product must meet and/or conform to the following:

Volume: Apply the recommended rate in a minimum spray volume 20-100 litres per hectare.

Do not angle nozzles forward into the airstream and do not increase spray volume by increasing nozzle pressure.

Thoroughly wash aircraft, especially landing gear, after each day of spraying to remove residues of this product accumulated during spraying or from spills. **PROLONGED EXPOSURE OF THIS PRODUCT TO UNCOATED STEEL SURFACES MAY RESULT IN CORROSION AND POSSIBLE FAILURE OF THE PART. LANDING GEAR ARE MOST SUSCEPTIBLE.** The maintenance of an organic coating (paint) which meets aerospace specification MIL-C-38412 may prevent corrosion.

### **3.3.3 BOOM EQUIPMENT**

**For control of herbaceous weeds and woody brush and trees listed in the “Vegetation Controlled” section of this label using conventional boom equipment –** Apply this product in 100 to 300 litres of clean water per hectare as a broadcast spray using no more pressure than 275 kPa. See “**Site Preparation**” (section 5.2.2) and “**Application Rates**” (section 6.1) for rates to control specific weeds.

### **3.3.4 BOOMLESS EQUIPMENT**

For control of herbaceous weeds, woody brush and trees listed in the “**Vegetation Controlled**” section of this label using boomless equipment such as cluster nozzles – Apply this product in 100 – 350 litres of clean water per hectare as a broadcast spray using no more pressure than 275 kPa.

### **3.3.5 HAND HELD AND HIGH VOLUME EQUIPMENT (use coarse sprays only)**

**For control of herbaceous weeds and woody brush and trees listed in the “Vegetation Controlled” section of this label using knapsack sprayers or high volume spraying equipment utilizing handguns or other suitable nozzle arrangements.**

Applications should be made on a spray-to-wet basis. Spray coverage should be uniform and complete. Do not spray to point of run-off.

### **3.3.6 MIST BLOWER EQUIPMENT**

**For control of herbaceous weeds, woody brush and trees listed in the “Vegetation Controlled” section of this label – Use the recommended rate of this product in at least 200 litres of water per hectare.**

## **4.0 VEGETATION CONTROLLED**

This product controls many annual and perennial grasses, broadleaf weeds, and woody brush and trees when applied as recommended and under conditions described. For information on how to control specific weeds including herbicide rate, refer to the “Site Preparation” (section 5.2.2) and the “**Weed Control in Non-Cropland Areas**” table (section 6.1). The following is a partial list of weeds controlled:

### **4.1 ANNUAL WEEDS**

#### **ANNUAL GRASSES**

##### **Barnyard Grass**

*Echinochloa crusgalli*

##### **Blue Grass (annual)**

*Poa annua*

##### **Crab Grass (large)**

*Digitaria sanguinalis*

##### **Crab Grass (smooth)**

*Digitaria ischaemum*

##### **Downy Brome**

*Bromus tectorum*

##### **Fall Panicum**

*Panicum dichotomiflorum*

##### **Giant Foxtail**

*Setaria faberii*

##### **Green Foxtail**

*Setaria viridis*

##### **Persian Darnel**

*Lolium persicum*

##### **Wild Oats**

*Avena fatua*

##### **Wild Proso Millet**

*Panicum miliaceum*

##### **Yellow Foxtail**

*Setaria glauca*

**OTHER****Dodder***Cuscuta spp.***ANNUAL BROADLEAF WEEDS****Chickweed***Stellaria media***Cleavers***Galium aparine***Cocklebur***Xanthium strumarium***Corn Spurry***Spergula arvensis***Cow Cockle***Saponaria vaccaria***Eastern Black Flowering Nightshade***Solanum ptycanthum***Fleabane (Canada)***Erigeron canadensis***Flixweed***Descurania sophia***Green Smartweed***Polygonum scabrum***Hempnettle***Galeopsis tetrahit***Kochia***Kochia scoparia***Lady's-Thumb***Polygonum persicaria***Lamb's-quarters (common)***Chenopodium album***Narrow-leaved Hawk's Beard***Crepis tectorum***Narrow-leaved Vetch***Vicia angustifolia***Night-flowering Catchfly***Silene noctiflora***Pennsylvania Smartweed***Polygonum pennsylvanicum***Prickly Lettuce***Lactuca scariola***Ragweed (common)***Ambrosia artemisifolia***Redroot Pigweed***Amaranthus retroflexus***Round-Leaved Mallow***Malva pusilla***Russian Thistle***Salsola pestifer***Shepherd's Purse***Capsella bursa-pastoris***Smooth Pigweed***Amaranthus hybridus***Sowthistle (annual)***Sonchus oleraceus***Stinkweed***Thlaspi arvense***Storksbill***Erodium cicutarium***Velvetleaf***Abutilon theophrasti***Wild Buckwheat***Polygonum convolvulus***Wild Mustard***Sinapsis arvensis***Wild Tomato***Solanum triflorum***4.2 PERENNIAL WEEDS****PERENNIAL GRASSES/SEDGES**

**Blue Grass (Canada)***Poa compressa***Blue Grass (Kentucky)***Poa pratensis***Brome Grass (smooth)***Bromus inermis***Cattail (common)***Typha latifolia***Foxtail Barley***Hordeum jubatum***Quackgrass***Agropyron repens***Wire-Stemmed Muhly***Muhlenbergia frondosa***Yellow Nutsedge***Cyperus esculentus***PERENNIAL BROADLEAVED WEEDS****Alfalfa***Medicago spp.***Cottontop***Eriophorum chamissionis***Curled Dock***Rumex crispus***Dandelion***Taraxacum officinale***Field Bindweed***Convolvulus arvensis***Hemp Dogbane***Apocynum cannabinum***Hoary Cress***Cardaria draba***Knotweed (Japanese)***Polygonum cuspidatum***Milkweed (common)***Asclepias syriaca***Poison Ivy***Rhus radicans***Purple Loosestrife***Lythrum salicaria***Sow Thistle (perennial)***Sonchus arvensis***Thistle (Canada)***Cirsium arvense***Toad Flax***Linaria vulgaris***Wormwood (Absinth)***Artemisia absinthium*

### 4.3 WOODY BRUSH AND TREES

#### **Alder**

*Alnus spp.*

#### **Birch**

*Betula spp.*

#### **Broadleaved meadowsweet**

*Spiraea latifolia*

#### **Canadian rhododendron**

*Rhododendron canadenses*

#### **Cedar**

*Thuja spp.*

#### **Cherry**

*Prunus spp.*

#### **Douglas Fir**

*Pseudotsuga spp.*

#### **Hemlock**

*Tsuga spp.*

#### **Maple**

*Acer spp.*

#### **Mountain-fly honeysuckle**

*Lonicera villosa*

#### **Pine**

*Pinus spp.*

#### **Poplar**

*Populus spp.*

#### **Raspberry/Salmonberry**

*Rubus spp.*

#### **Sheep laurel**

*Kalmia angustifolia*

#### **Snowberry (Western)**

*Symphoricarpos occidentalis*

#### **Sweet fern**

*Comptonia peregrina*

#### **Willow**

*Salix spp.*

#### **Withrod**

*Viburnum cassinoides*

For perennial broadleaf weeds, apply when most weeds have reached early head or early bud stage of growth. For annual and perennial grasses, apply when most weeds are at least 20 centimetres in height (the 3-4 leaf stage of growth).

If herbaceous weeds have been mowed, tilled, or scarified, do not treat until re-growth has reached the recommended stages, as reduced effectiveness will result. Most herbaceous weeds can be treated after a mild frost, provided the leaves are still green and

actively growing at the time of application. Do not apply after the first damaging frost. Allow 7 or more days after application before tillage or other soil disturbance. Repeat treatments may be necessary to control weeds regenerating from underground parts or seed.

## 5.0 SILVICULTURAL SITE-PREPARATION

**ALWAYS READ PRECAUTIONS, GENERAL INFORMATION AND MIXING AND APPLICATION SECTIONS (1.0, 2.0 AND 3.0) PRIOR TO SPECIFIC APPLICATION INFORMATION IN ANY LABEL SECTION.**

Use this product at the recommended rates to control of unwanted vegetation prior to planting of conifer or deciduous tree species. A partial list of species controlled can be found in the “**Vegetation Controlled**” section (4.0) of this label.

### 5.1 APPLICATION RATES

When applied as recommended under the conditions described, this product will control weeds in silvicultural site-preparation areas as listed in the following table.

<b>WEEDS CONTROLLED</b>	<b>RECOMMENDED RATE (L/ha)</b>	<b>COMMENTS</b>
Annual Weeds	3.0 – 4.5	Apply to actively growing weeds.  Use higher rates for larger, more established plant communities, heavy infestations or if plants are stressed.
Perennial Weeds*	4.5 – 7.0	Suppression in some weeds may result with lower application rates.  Use higher rates for larger, more established plant communities, heavy infestations or if plants are stressed.
Woody brush, deciduous tree species*	4.5 – 12.0	Use higher rates in applications on hard to control species.
Ericaceous species (e.g. Kalmia spp. – sheep laurel, lamb kill)*	6.0 – 12.0	An additional silicon based surfactant (such as Sylgard 309) may be required.  Apply between mid-August and mid-September for maximum performance.
Conifer species*	4.5 – 12.0	Use lower rates for control of pine and cedar species.  Use higher rates for hemlock and Douglas Fir species.

<b>WEEDS CONTROLLED</b>	<b>RECOMMENDED RATE (L/ha)</b>	<b>COMMENTS</b>
		Use higher rates when larger or more established plants are present.

\* Note: for aerial site preparation applications greater than 6 litres per hectare of product, use 50 to 100 litres of water per hectare.

## 5.2 DIRECTIONS FOR USE FOR SILVICULTURAL SITE-PREPARATION

Spray coverage should be uniform and complete. Do not spray to the point of runoff. Do not allow spray drift to contact non-target desirable vegetation as severe damage may occur.

### 5.2.1 RESTRICTED USES – FOREST AND WOODLANDS MANAGEMENT

**Ground/Aerial Application for Sites greater than 500 ha (Forestry use)**

**Aerial Application for Sites 500 ha or less (Woodlands Use)**

**NOTICE TO USER** – This control product is to be used only in accordance with the directions on this label. It is an offence under the Pest Control Products Act to use a control product under unsafe conditions.

**NATURE OF RESTRICTION** – This product is to be used only in the manner authorized; consult local pesticide regulatory authorities about use permits which may be required.

Do not apply to any body of water populated with fish or used for domestic purposes. Do not use in areas where adverse impact on domestic water or aquatic species is likely.

In order to reduce the drift hazard to non-target plants and aquatic species when aurally treating silvicultural sites, ensure that appropriate buffer zones are maintained.

### 5.2.2 SITE PREPARATION

Use this product as broadcast treatment at recommended rates, as listed in the “**Application Rates**” section, to control herbaceous weeds, woody brush and tree species listed in the “**Vegetation Controlled**” section. Apply when brush and tree species are actively growing and when foliage is full and well-developed. For best results apply in late summer or early fall. Some autumn colours on undesirable deciduous species are acceptable provided no major leaf fall has occurred. Following site preparation application of this product, any silvicultural species may be planted.

### 5.2.3 WOODLAND MANAGEMENT

## **Treatment of 500 ha or less**

### **SITE PREPARATION (Ground only), FOREST ROADSIDE (Ground only)**

Use this product as a broadcast treatment at recommended rates, as listed in the “**Application Rates**” section, to control herbaceous weeds, woody brush and tree species listed in the “**Vegetation Controlled**” section. For control of herbaceous weeds, apply when most perennial broadleaf weeds have reached the early head or early bud stage of growth. For perennial grasses, apply when most weeds are 20 cm in height. Apply when brush and tree species are actively growing and when foliage is full and well-developed. For best results apply in later summer or early fall. Some autumn colours on undesirable deciduous species are acceptable provided no major leaf fall has occurred. Following site preparation application of this product, any silvicultural species may be planted.

#### **5.2.4 FOREST TREE PLANTING NURSERIES (Ground only)**

This product may be used for site preparation to control most annual and perennial weeds, brush and trees prior to establishment of nursery plantations or forest seed orchards.

For specific rates and application instructions see “**Application Instructions**” section of this label. **DO NOT APPLY UNDER WIND OR OTHER CONDITIONS WHICH ALLOW DRIFT TO OCCUR.** If weeds have been mowed or tilled do not treat until re-growth has reached the recommended stages.

This product does not provide pre-emergence weed control. Repeat treatments may be necessary to control weeds generating from underground parts or seed.

## **6.0 NON-CROPLAND USES: INDUSTRIAL, RIGHTS-OF-WAY, RECREATIONAL, AND PUBLIC AREAS.**

**ALWAYS READ PRECAUTIONARY STATEMENTS, GENERAL INFORMATION AND MIXING AND APPLICATION SECTIONS (1.0, 2.0 AND 3.0) PRIOR TO SPECIFIC APPLICATION INFORMATION IN ANY LABEL SECTION.**

This product can be used to control annual and perennial weeds and woody brush and trees listed on this label in non-crop areas such as railroad, pipeline, highway, power and telephone rights-of-way, petroleum tank farms and pumping installations; roadsides; storage areas; lumberyards; fence rows; industrial plant sites; parking areas; school yards, parks, golf courses, other public areas; airports and similar industrial or non-crop areas.

**NOTE:** For all industrial, rights-of-way, recreational and public areas, repeat treatments may be necessary to control regeneration or new growth.

When applied as recommended under the conditions described, this product will control weeds in non-cropland areas as listed in the following table.

## 6.1 APPLICATION RATES: WEED CONTROL IN NON-CROPLAND AREAS WITH CATENA HERBICIDE

WEEDS	GROUND APPLICATION*			COMMENTS
	BOOM APPLICATION		HAND HELD HIGH VOLUME APPLICATION N % SOLUTION	
	RATE (L/ha)	WATER VOL.* (L/ha)		
<b>Annual grasses and broadleaves</b>	3.0 – 4.5	50-100	1	<ul style="list-style-type: none"> <li>Actively growing weeds.</li> </ul>
<b>Perennial Weeds</b>				<ul style="list-style-type: none"> <li>Actively growing weeds.</li> <li>Add 0.5% v/v of a recommended surfactant when using water volumes greater than 150 L (see section 6.2.1.1).</li> <li>Higher rate for long term control and for heavy infestations.</li> <li>See section 6.2.3 for instructions on purple loosestrife applications.</li> <li>Summer through fall is optimum.</li> </ul>
Quackgrass	4.5-7.0	50-300	2	
Canada Thistle (bud stage)	4.5–7.0	100-300	2	
Purple Loosestrife	6.0	300-600	1-2 (or 33% for wiper application)	
Other Perennials	7.0-12	100-300	2	
<b>Brush and Trees</b>				
Birch, Cherry, Poplar, Western Snowberry	3.0-6.0	100-300	1-2	<ul style="list-style-type: none"> <li>Summer through early fall.</li> </ul>
Maple, Raspberry/Salmonberry, Alder, Willow,	4.5 –12.0	100-300	2	<ul style="list-style-type: none"> <li>summer through fall.</li> </ul>
Pine, Hemlock, Douglas Fir	5.0-12.0	100-300	2	<ul style="list-style-type: none"> <li>Use higher rates for larger, more established plant communities, heavy infestations or if plants are stressed.</li> </ul>
<b>Turf Renovation</b>				

WEEDS	GROUND APPLICATION*			COMMENTS
	BOOM APPLICATION		HAND HELD HIGH VOLUME APPLICATION % SOLUTION	
	RATE (L/ha)	WATER VOL.* (L/ha)		
Annual and perennial weeds	3.0-12.0	100-300	1-2	<ul style="list-style-type: none"> <li>• Use higher end of the rate range for perennials.</li> </ul>
<b>Roadside Vegetation</b> (1-2m wide along shoulders) Annual weeds (refer to tank mix sections on product labels for specific weeds controlled)	<b>1)</b> 3.0 + 1.25 – 2.5 L DyCler®480 or <b>2)</b> 3.0 + 0.30 L DyCler 480 + 1.2 L 2,4-D amine 500	25-150	-	<ul style="list-style-type: none"> <li>• For 2,4-D amine formulations with a different guarantee, adjust the rate accordingly.</li> <li>• No application to standing water.</li> </ul>
<b>Residual Control</b> Annual and perennial weeds (the simazine component of this tank mixture will provide season long control of most germinating broadleaf weeds and grasses. It may also provide postemergent activity on certain annual weeds).	3.0 – 12 + <b>a)</b> 2.5 - 5.6 kg simazine 80W or + <b>b)</b> 4.0 - 9.0 L Simadex Flowable	200-400	-	<ul style="list-style-type: none"> <li>• Do not apply to coarse, sandy or gravelly soil. One application per year.</li> <li>• Use according to the most restrictive label directions for each product in the mixture.</li> <li>• For other simazine formulations registered for industrial/ non-cropland areas, use equivalent rates; i.e., 2.0 – 4.5 kg simazine/ha.</li> </ul>

\* Aerial application may be used for brush and tree control in industrial rights-of-way only. See “**Aerial Application**” (sections 3.3.2 and 6.2.2).

DyCleer is a registered trademark of BASF Ltd.  
 Simadex is a registered trademark of Aventis CropScience.

## **6.2 APPLICATION INFORMATION FOR NON-CROPLAND USES**

### **FOLIAR APPLICATIONS**

Spray coverage should be uniform and complete. Do not spray to the point of run-off. Do not allow spray drift to contact desirable vegetation as severe injury or destruction may occur. For woody brush and trees, early season applications may take 30 to 45 days for symptoms to develop on target species. Late season application may be made to species that have some autumn colours provided no major leaf drop has occurred. Control will be observed the following spring.

**EXTREME CARE MUST BE EXERCISED TO AVOID CONTACT OF SPRAY WITH FOLIAGE OF DESIRABLE TURF GRASSES, TREES, SHRUBS, OR OTHER DESIRABLE VEGETATION SINCE SEVERE DAMAGE OR DESTRUCTION MAY RESULT.**

This product does not provide residual weed control. For subsequent weed control, follow a label approved herbicide program. Read and carefully observe the cautionary statements and all other information appearing on the labels of all herbicides used.

#### **6.2.1 GROUND APPLICATIONS: For all non-cropland uses**

For woody brush and trees, apply 3 to 12 litres of this product per hectare. Use ground boom or boomless, or mist blower equipment, or apply as a 1 to 2 percent solution using hand held, high volume equipment. Apply as directed in the recommended volume of clean water to foliage of actively growing vegetation. Use the higher rates for control of Maple, Alder, Willow, Pine, and Douglas Fir species, as well as for hard to control perennial weed species.

Spray coverage should be uniform and complete. Do not spray to the point of run-off. Do not allow spray drift to contact desirable vegetation as severe injury or destruction may occur. If weeds have been mowed or tilled, do not treat until regrowth has reached the recommended stages.

##### **6.2.1.1 SURFACTANTS**

The following is a list of approved surfactants for use with Catena herbicide for control of quackgrass for ground applications on non-cropland uses when water volumes exceed 150 litres per hectare:

Agral 90	Companion
Ag Surf	Frigate

Always refer to surfactant label for specific instructions regarding use of that product.

Frigate is a registered trademark of Syngenta Canada Ltd.

### **6.2.2 AERIAL APPLICATIONS: For industrial rights-of-way only**

For control of annual, perennial, woody brush and trees, apply 3 to 12 litres of this product per hectare. Use the higher rates for hard to control species such as Maple, Alder, Willow, Pine, and Douglas Fir as well as for hard to control perennial weed species. Use the recommended rates of this herbicide in 20 to 100 litres of water per hectare when application rates are less than 6 litres of product per hectare. When application rates exceed 6 litres of product per hectare, use 50 to 100 litres of water per hectare.

As density of vegetation increases, spray volume should be increased within the recommended range to ensure complete coverage.

Coarse sprays are less likely to drift; therefore do not use nozzles or nozzle configurations which dispense spray as fine spray droplets. Do not angle nozzles forward into the air stream and do not increase spray volume by increasing nozzle pressure.

Ensure uniform application – To avoid streaked, uneven or overlapped application, use appropriate marking devices, or equivalent electronic positioning systems (GPS).

Thoroughly wash aircraft, especially landing gear, after each day of spraying to remove residues of this product accumulated during spraying or from spills. **PROLONGED EXPOSURE OF THIS PRODUCT TO UNCOATED STEEL SURFACES MAY RESULT IN CORROSION AND POSSIBLE FAILURE OF THE PART. LANDING GEAR ARE MOST SUSCEPTIBLE.** The maintenance of an organic coating (paint) which meets aerospace specification MIL-C-38412 may prevent corrosion.

### **6.2.3 PURPLE LOOSESTRIFE CONTROL**

- **DO NOT TREAT PLANTS OVER OPEN WATER.** Catena Herbicide is not registered for direct application to bodies of water.
- Treat when plants are actively growing at or beyond the bloom stage. If using hand held equipment, spray-to-wet.
- For wiper applications see section 7.0.
- Where feasible, remove flower heads before treatment to ensure prevention of seed set.

- For large (>1.6 ha) monocultures of loosestrife, work from the periphery inward in successive years to allow competing vegetation to invade the treated area.
- A long-term control strategy should include measures to control both established plants and seedlings. Sprayed areas should be monitored to determine the appropriate follow-up management. Early detection and treatment of second and third generation seedlings is important to prevent re-infestation of purple loosestrife. Desirable native plant communities will then have a chance to become re-established.

### **6.3 SELECTIVE APPLICATION FOR ALL NON-CROPLAND USES**

Selective equipment such as WIPER and ROLLER applicators can be used to control emerged weeds in non-crop areas and tree plantings. See “**Individual Stem Control**” (section 7.0) for more information.

### **6.4 TURFGRASS RENOVATION**

When applied as directed, under conditions described, this product controls most existing vegetation. Apply this product at rates specified in “**Weed Control in Non-Cropland Areas**” (section 6.1).

#### **DO NOT DISTURB SOIL OR UNDERGROUND PLANT PARTS BEFORE TREATMENT.**

Where existing vegetation is growing in a field or unmowed situation, apply this product to actively growing weeds. As density of the target vegetation increases, rate and spray volume should be increased within the recommended ranges to ensure effectiveness of the treatment.

Where existing vegetation is growing under mowed turfgrass management, apply this product after omitting at least one regular mowing to allow sufficient growth for good interception of the spray and proper translocation into underground plant parts. Tillage or renovation techniques such as vertical mowing, coring or slicing should be delayed for 7 days after application to allow proper translocation into underground plant parts.

For maximum control of existing vegetation, delay establishment to determine if regrowth from escaped underground plant parts occurs. When repeat treatments are necessary, sufficient regrowth must be attained prior to application. Desirable turfgrass may be established following the above procedures.

### **6.5 TREE PLANTINGS**

#### **SHELTERBELTS AND NURSERY STOCK (WOODY ORNAMENTALS)**

This product may be used to control listed annual or perennial weeds prior to planting of ornamental tree nurseries or shelterbelts of the following species:

**DECIDUOUS****Ash***Abies spp.***Caragana***Caragan spp.***Cherry***Prunus spp.***Elm***Ulmus spp.***Lilac***Syringa spp.***Maple***Acer spp.***Mountain Ash***Sorbus spp.***Poplar***Populus spp.***Russian Olive***Elaeagnus spp.***Willow***Salix spp.***CONIFEROUS****Fir***Abies spp.***Juniper***Junipus spp.***Pine***Pinus spp.***Spruce***Picea spp.***Yew***Taxus spp.*

**NOTE:** this product is not recommended for use as an over-the-top broadcast or directed spray in tree nurseries, shelterbelts or in Christmas tree plantations. The use of Catena herbicide could result in severe injury to the crop trees.

**7.0 INDIVIDUAL STEM CONTROL****7.1 INJECTION APPLICATIONS FOR INDIVIDUAL STEM CONTROL -- FOR ALL SILVICULTURAL AND NON-CROPLAND USES**

Woody vegetation may be controlled by injection application of this product. Apply using suitable equipment, which must penetrate into living tissue, at a rate of at least 0.5 millilitres (either undiluted or 1:1 with water) per 5 centimetres tree diameter at breast height (DBH). The cuts should be spaced evenly around the tree and below all major branches. Application may be made at any time of year, except when cold temperatures prevent adequate penetration of injection equipment, or in the spring during periods of heavy sap flow. Control of tree species with tree diameters greater than 20 centimetres may not be acceptable at this rate.

Total control may not be evident for 1 to 2 years following treatment.

A partial list of species controlled includes:

**Alder**

*Alnus spp.*

**Birch**

*Betula spp.*

**Cedar**

*Thuja spp.*

**Cherry**

*Prunus spp.*

**Douglas Fir**

*Pseudotsuga spp.*

**Hemlock**

*Tsuga spp.*

**Maple\***

*Acer spp.*

**Pine**

*Pinus spp.*

**Poplar**

*Populus spp.*

**Willow**

*Salix spp.*

\* This treatment may only provide suppression of Bigleaf Maple. Late fall applications will provide optimum suppression of Bigleaf Maple.

## 7.2 CUT STUMP APPLICATION

Woody vegetation may be controlled by the application of this product to freshly cut stumps to prevent regrowth. Because the treatment uses a concentrated solution, application must be made using low-pressure equipment e.g., squirt bottle or similar device. This product must be applied immediately to the surface of the freshly cut stump i.e., within 5 minutes for optimum control at the prescribed rates. Only the cambial tissues of the cut surface should be treated. Apply the herbicide solution at a rate equivalent to at least 0.5 millilitres product for every 5 centimetres DBH. Do not cover the remaining area nor any exposed roots, as this product does not penetrate bark well. This treatment may be used at any time of year, except during periods of heavy sap flow or when low temperatures prevent solution application due to freezing. A water soluble colourant may be added to the solution as a means of indicating which surfaces have been treated. Total control may not be evident until 1 to 2 years after treatment.

See “**Injection Applications**” (section 7.1) of this label for a partial list of species controlled.

## 7.3 SELECTIVE EQUIPMENT – WIPER APPLICATIONS

This product may be applied with a wiper applicator, after dilution and thorough mixing with water, to listed weeds in the “**Vegetation Controlled**” section of this label.

A wiper applicator applies the herbicide solution onto weeds by rubbing the weed with an absorbent material containing the herbicide solution. Equipment must be designed, maintained and operated to prevent the herbicide solution from contacting desirable vegetation. Performance may be improved by reducing speed in areas of heavy weed infestations to insure adequate wiper saturation. Best results may be obtained if 2 applications are made in opposite directions.

**AVOID CONTACT WITH DESIRABLE VEGETATION.** Contact of the herbicide solution with desirable vegetation may result in damage or destruction. Applicators used above desired vegetation should be adjusted so that wiper contact point is at least 5 centimetres above the desirable vegetation. Droplets or foam of the herbicide solution settling on desirable vegetation may result in discoloration, stunting or destruction.

Applications should be made when the weeds are a minimum of 15 centimetres above the desirable vegetation. Best results may be obtained when more of the weed is exposed to the herbicide solution. Weeds not contacted by the herbicide solution will not be affected. This may occur in dense clumps, severe infestations, or when the height of the weeds varies so that not all weeds are contacted. In these instances, repeat treatments may be necessary. See the “**Site Preparation**” (section 5.2.2) and “**Application Rates**” table (section 5.1) for recommended stage of growth for specific weeds.

## **NOTES**

Maintain equipment in good operating condition. Avoid leakage or dripping onto desirable vegetation.

Adjust height of applicator to insure proper contact with weeds.

Keep wiping surfaces clean.

Keep wiper material at proper degree of saturation with herbicide solution.

NO NOT use wiper equipment when weeds are wet.

NO NOT operate equipment at ground speeds below 4 and greater than 10 kilometres per hour. Weed control may be affected by speed of application equipment. As weed density increases, reduce equipment ground speed to insure good coverage of weeds.

Be aware that on sloping ground the herbicide solution may migrate, causing dripping on the lower end and drying on the upper end of the wiper applicator.

Variation in equipment design may affect weed control. With wiper applicators, the wiping material and its orientation must allow delivery of sufficient quantities of the recommended herbicide solution directly to the weed.

Care must be taken with all types of wipers to insure that the absorbent material does not become over-saturated, causing the herbicide to drip onto desirable vegetation.

With all equipment, drain and clean wiper parts immediately after using this product, by thoroughly flushing with water.