

GROUP 2 & 4 HERBICIDE

# TruRange

HERBICIDE

WETTABLE GRANULE

COMMERCIAL

READ THE LABEL AND ATTACHED BOOKLET BEFORE USING

**ACTIVE INGREDIENT:** Metsulfuron-methyl 12.6%  
Aminocyclopyrachlor 39.5%

WARNING, contains the allergens, sulfites and milk.

REGISTRATION NO. 33964 PEST CONTROL PRODUCTS ACT

**NET CONTENTS:** 167 grams to bulk

2022 Environmental Science CA Inc.  
137 Glasgow Street, Suite 210, Unit 111,  
Kitchener, Ontario,  
N2G 4X8

Product Information: 1-888-283-6847

<https://www.ca.envu.com>

In case of spills, poisoning or fire, telephone emergency response number  
1-800-334-7577 (24 hours a day).

## **PRECAUTIONS:**

- **KEEP OUT OF REACH OF CHILDREN.**
- Do not contaminate any body of water.
- Wear chemical resistant gloves, long-sleeved shirt, long pants, shoes and socks during mixing/loading, application, clean-up and repair activities (gloves are not required for ground boom sprayers).
- Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours following application on agricultural areas.
- Do not use in residential or recreational areas, including lawns and turf. Residential areas are defined as any use site where bystanders including children could be exposed during or after application. This includes homes, schools, parks, playgrounds, playing fields, public buildings, or any other area where the general public including children could be exposed.
- Apply only when the potential for drift to areas of human habitation or areas of human activity (houses, cottages, schools and recreational areas) is minimal. Take into consideration wind speed, wind direction, temperature inversions, application equipment and sprayer settings.

## **ENVIRONMENTAL PRECAUTIONS:**

TOXIC to aquatic organisms and non-target terrestrial plants including coniferous and deciduous trees. Observe buffer zones specified under DIRECTIONS FOR USE.

### **Runoff:**

To reduce runoff from treated areas into aquatic or terrestrial habitats, avoid application to areas with a moderate to steep slope, compacted soil, or clay.

Avoid application of this product 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.

### **Leaching:**

The use of this chemical may result in contamination of groundwater, particularly in areas where soils are permeable (e.g. sandy soil) and/or the depth to the water table is shallow.

## **FIRST AID:**

### **IF IN EYES:**

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

### **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 SWALLOWED:**

Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. 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 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.

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

**TOXICOLOGICAL INFORMATION:** Treat symptomatically. Medical personnel should contact 2022 Environmental Science CA's medical information services toll-free 1-800-334-7577.

**STORAGE:**

To prevent contamination, store this product away from food or feed.

**DISPOSAL/ DECONTAMINATION:**

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Follow provincial instruction for any required additional cleaning of the container prior to its disposal.
3. Make the empty container unsuitable for further use.
4. Dispose of the container in accordance with provincial requirements.
5. For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

**NOTICE TO USER:**

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

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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.

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The use of this chemical may result in contamination of groundwater, particularly in areas where soils are permeable (e.g. sandy soil) and/or the depth to the water table is shallow.

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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.

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

**TOXICOLOGICAL INFORMATION:** Treat symptomatically. Medical personnel should contact 2022 Environmental Science CA's medical information services toll-free 1-800-334-7577.

**IMPORTANT INFORMATION - Read Before Using**

- Avoid application of this product in areas where the roots of desirable trees and/or shrubs may extend unless injury or loss can be tolerated. Root zone areas of desirable trees or vegetation are affected by local conditions and can extend well beyond the tree canopy.
- Avoid overspray or drift to important aquatic and wildlife habitats such as lakes, streams and ponds, shelterbelts, wetlands, sloughs, and dry slough borders, woodlots, vegetated ditch banks and other cover on the edge of fields.
- Certain species may, in particular, be sensitive to low levels of TruRange including but not limited to, conifers (such as Douglas fir, Norway spruce, ponderosa pine and white pine), deciduous trees (such as aspen, cottonwood, honey locust, magnolia, poplar species, redbud, silver maple, and willow species), and ornamental shrubs (such as arborvitae, burning bush, crape myrtle, forsythia, hydrangea, ice plant, magnolia, purple plum and yew).
- Injury or loss of desirable trees or vegetation may result if TruRange is applied on or near desirable trees or vegetation, on areas where their roots extend, or in locations where the treated soil may be washed or moved into contact with their roots. Consider site-specific characteristics and conditions that could contribute to unintended root zone exposure to desirable trees or vegetation. Root zone areas of desirable trees or vegetation are affected by local conditions and can extend beyond the tree canopy. If further information is needed regarding root zone area, consult appropriate provincial extension service, professional consultant or other qualified authority.
- Do not use on lawns or turf.
- If rangeland or pasture sites treated with TruRange are to be converted to a food, feed, or fiber agricultural crop, or to a horticultural crop, a field bioassay should be completed before planting the desired crop. Refer to FIELD BIOASSAY section of this label
- Avoid application in or on dry or water containing irrigation ditches or canals including their outer banks.
- Treatment of powdery, dry soil and light, sandy soils when there is little likelihood of rainfall soon after treatment may result in off target movement and possible damage to susceptible crops and desirable vegetation when soil particles are moved by wind or water. Injury to crops or desirable vegetation may result if treated soil is washed, blown or moved onto land used to produce crops or land containing desirable vegetation. Do not apply TruRange when these conditions are identified and powdery, dry soil or light or sandy soils are known to be prevalent in the area to be treated.
- Injury to or loss of desirable trees or vegetation may result if equipment is drained or flushed on or near these trees or vegetation, or on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots.
- In areas adjacent to desirable vegetation, avoid overlapping spray applications and shut off spray equipment while starting, turning, slowing or stopping to avoid injury to desirable vegetation.

- Applications made where runoff water flows onto agricultural land may injure or kill crops, such as but not limited to canola, pulses, peas, sugar beets, potatoes, tomatoes, soybeans, field beans, alfalfa, grapes, and vegetables.
- Caution is advised when using this product in areas where loss of desirable conifer or deciduous trees and/or shrubs as well as other broadleaf plants, including but not limited to, legumes and wild flowers, cannot be tolerated. Without prior experience, it is advisable that small areas containing these plants be tested for tolerance to TruRange and its soil residues before any large scale spraying occurs.
- Low rates of TruRange can kill or severely injure most crops. Following a TruRange application, the use of improperly cleaned spray equipment to apply other pesticides to crops on which TruRange is not registered may result in their damage. Refer to SPRAYER CLEANUP section of this label for details. The most effective way to reduce this crop damage potential is to use dedicated mixing and application equipment.
- It is recommended that treated soils remain undisturbed to reduce the potential for TruRange movement by soil erosion due to wind or water.
- Caution is advised when using this product on grass that is stressed by drought, water saturated soils, wide fluctuations in day and night temperatures, low fertility, insect damage, or disease as unacceptable grass injury may occur.
- To prevent injury to desirable plants, read and follow all instructions in the MANURE MANAGEMENT and HAY AND OTHER PLANT MATERIAL MANAGEMENT sections of this label.

APPLY TRURANGE WITH A RECOMMENDED SURFACTANT LISTED UNDER DIRECTIONS FOR USE.

### **GENERAL INFORMATION**

TruRange is a dispersible granule to be mixed in water and applied as a foliar spray for control of undesirable brush/woody plants in rangeland and pastures.

TruRange is noncorrosive, nonflammable, nonvolatile and does not freeze. TruRange is quickly taken up by the leaves, stems and roots of plants. The effects of TruRange may be seen on plants from within a few hours to a few days. The most noticeable symptom is a bending and twisting of stems and leaves. Other advanced symptoms include severe chlorosis, necrosis, stem thickening, growth stunting, leaf crinkling, calloused stems and leaf veins, leaf-cupping, and enlarged roots.

TruRange is rain-fast at 4 hours after application.

Warm, moist conditions following treatment promote the activity of TruRange while cold, dry conditions may reduce or delay activity. The length of control is dependent upon the application rate, condition and growth stage of target weeds, environmental conditions at and following application, and the density and vigor of competing desirable vegetation. Best results for long term weed and brush control occur when grasses and other desired vegetation are allowed to recover from adverse environmental conditions and compete with undesirable brush or weeds.

### **DIRECTIONS FOR USE**

As this product is not registered for the control of pests in aquatic systems, DO NOT use to control aquatic pests.

TruRange must be used only in accordance with recommendations on this label.

Do not mix, load or apply within a minimum of 15 metres of all wells, including abandoned wells and drainage wells. Do not contaminate water intended for drinking.

Do not apply through any type of irrigation system.

Do not apply more than a total of 499 g/ha of TruRange per season

## **RANGELAND & PASTURES.**

### **FOR CONTROL OF BRUSH, WOODY PLANTS AND OTHER BROADLEAF WEEDS**

TruRange may be applied as a broadcast treatment at 167, 334 or 499 grams per hectare (see list below). Add a non-ionic surfactant at 0.25% v/v (2.5 litres per 1000 litres of spray solution) or Merge Adjuvant\* at 1.0% v/v (10 litres per 1000 litres of spray solution) or Crop Oil Concentrate at 1.0% v/v (10 litres per 1000 litres of spray solution).

Temporary chlorosis, height reduction or growth suppression of grass species may occur.

For best results, applications of TruRange should be made when brush species and weeds are actively growing. Complete coverage of all foliage and stems is required for brush control. Applications should be made after the target species have leafed out, but before fall colouration has begun. Do not treat brush species that exceed 2.5 m in height (unless otherwise indicated) or control may be decreased.

Note: Where dense stands exist or where growth of the target species is advanced, use of the high volume foliar application method is recommended.

Apply to brush species as a full coverage spray to foliage and stems using equipment that will ensure uniform coverage.



<b>TruRange</b>	
<b>SITES:</b> Rangeland, Pastures	
<b>TIMING:</b> For best results, apply to young, actively growing weeds. Apply to actively growing brush species after species have leafed out. Thorough coverage is essential.	
<b>APPLICATION RATES for Ground or Aerial application</b>	
TruRange	167 grams/hectare
Adjuvants: Non-Ionic or Merge Adjuvant* or Crop Oil Concentrate	0.25% v/v or 1% v/v or 1% v/v
<b>Weeds Controlled</b>	
Annual sowthistle Ball mustard Bluebur Canada goldenrod* Canada thistle Chickweed Common groundsel Common tansy Common yarrow Corn spurry Cow cockle Dandelion Diffuse knapweed Flixweed Giant hogweed* (up to 4-leaf) Green smartweed Hemp-nettle Kochia (including ALS-resistant) Lady's-thumb Leafy spurge Norwegian cinquefoil* Orange hawkweed Ox-eye daisy	Perennial sowthistle Poison Ivy Prostrate pigweed Redroot pigweed Russian thistle Scentless chamomille Shepherd's-purse Spotted knapweed Stinkweed Stork's-bill Sumac (smooth, staghorn) Sweet clover (white, yellow) Tall buttercup* Tartary buckwheat Volunteer canola (except Clearfield varieties) Western snowberry White cockle Wild carrot Wild chervil Wild mustard Wild parsnip Wild rose Yellow starthistle
*season-long control	
<b>Weeds Suppressed</b>	
Lamb's-quarters Toadflax Wild buckwheat	

<b>APPLICATION RATES for Ground or Aerial application</b>
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TruRange	334 grams/hectare	
Adjuvants: Non-Ionic or Merge Adjuvant* or Crop Oil Concentrate	0.25% v/v or 1% v/v or 1% v/v	
<b>Vines Controlled</b>		
Dog-strangling vine	<i>Vincetoxicum rossicum</i>	
<b>Brush Species Controlled</b>		
		<b>Maximum height</b>
Manitoba maple (Box Elder)	<i>Acer negundo</i>	2.5 metres
Red maple	<i>Acer rubrum</i>	2.5 metres
Sugar maple	<i>Acer saccharum</i>	2.5 metres
Black tupelo	<i>Nyssa sylvatica</i>	< 1 metre
Common sassafras	<i>Sassafras albidum</i>	2.5 metres
Green ash	<i>Fraxinus pennsylvanica</i>	2.5 metres
White ash	<i>Fraxinus americana</i>	2.5 metres
Black cherry	<i>Prunus serotina</i>	< 3 metres
Chokecherry	<i>Prunus virginica</i>	< 3 metres
Pin cherry	<i>Prunus pensylvanica</i>	< 3 metres
Balsam poplar	<i>Populus balsamifera</i>	2.5 metres
Trembling aspen	<i>Populus tremuloides</i>	< 3 metres
Plains cottonwood	<i>Populus sargentii</i>	2.5 metres
Black poplar	<i>Populus nigra</i>	2.5 metres
Sandbar / Ditchbank willow	<i>Salix exigua</i> or <i>S. interior</i>	2.5 metres
Large pussy willow	<i>Salix discolor</i>	2.5 metres
Yellow poplar (tulip tree)	<i>Liriodendron tulipifera</i>	2.5 metres
Tree of heaven	<i>Alianthus altissima</i>	2.5 metres
Hackberry	<i>Celtis occidentalis</i>	2.5 metres
Eastern white pine	<i>Pinus strobus</i>	< 2 metres
Jack pine	<i>Pinus banksiana</i>	< 2 metres
Red pine	<i>Pinus resinosa</i>	< 2 metres
Western white pine	<i>Pinus monticola</i>	< 2 metres
Balsam fir	<i>Abies balsamea</i>	< 2 metres
Douglas fir	<i>Pseudotsuga menziesii</i> ,	< 2 metres
Black spruce	<i>Picea mariana</i>	< 2 metres
Norway spruce	<i>Picea abies</i>	< 2 metres
White spruce	<i>Picea glauca</i>	< 2 metres

<b>APPLICATION RATES for Ground or Aerial application</b>		
TruRange	499 grams/hectare	
Adjuvants: Non-Ionic or Merge Adjuvant* or Crop Oil Concentrate	0.25% v/v or 1% v/v or 1% v/v	
<b>Brush Species Controlled</b>		
		<b>Maximum height</b>
Black oak	<i>Quercus velutina</i>	2.5 metres
Northern red oak	<i>Quercus rubra</i>	2.5 metres
Bitternut hickory	<i>Carya cordiformis</i>	< 2 metres
Pignut hickory	<i>Carya glabra</i>	< 2 metres
Eastern white pine	<i>Pinus strobus</i>	2-3 metres
Jack pine	<i>Pinus banksiana</i>	2-3 metres
Red pine	<i>Pinus resinosa</i>	2-3 metres
Western white pine	<i>Pinus monticola</i>	2-3 metres
Balsam fir	<i>Abies balsamea</i>	2-3 metres
Douglas fir	<i>Pseudotsuga menziesii</i> ,	2-3 metres
Black spruce	<i>Picea mariana</i>	2-3 metres
Norway spruce	<i>Picea abies</i>	2-3 metres
White spruce	<i>Picea glauca</i>	2-3 metres

### **GRAZING/HAYING**

There are no grazing or haying restrictions for non-lactating or lactating animals (including cattle, horses, sheep, and goats) when using TruRange as directed. Grazing animals do not have to be moved off the pasture or rangeland before, during or after applying TruRange. See Manure Management and Plant Material Management below for additional information.

### **MANURE MANAGEMENT**

Aminocyclopyrachlor, an ingredient in TruRange, passes through an animal's digestive tract and is excreted in urine and manure at levels that may cause injury to susceptible plants. Do not transfer grazed animals from areas treated with TruRange to areas where sensitive crops occur without first allowing 3 days of grazing on untreated areas.

The following restrictions apply to manure from animals that have grazed forage or eaten hay from areas that have been treated with TruRange within the prior 18 months.

- Do not apply manure to land used for growing susceptible crops.
- Manure may only be applied on rangeland and pastures.
- Do not use manure as mulch or compost and do not apply directly on or around desirable plants.
- Manure must only be used on-farm.

After removing animals from grazing on treated areas or eating forage or hay from treated areas, and waiting three days for treated material to clear the animal's digestive system, the animal's manure is no longer subject to the above restrictions.

### **HAY AND OTHER PLANT MATERIAL MANAGEMENT**

The following restrictions apply to all plant materials from areas treated with TruRange within the prior 18 months:

- Do not use plant material as mulch or compost and do not apply directly on or around desirable plants.

- Hay cut from grass which has been treated with TruRange within the prior 18 months, must only be used on-farm.
- Plant material from the treated area is no longer subject to the above restrictions 18 months after treatment.

#### **TANK MIXES:**

In some cases, tank mixing a pest control product with another pest control product or a fertilizer can result in biological effects that could include, but are not limited to: reduced pest efficacy or increased host crop injury. The user should contact 2022 Environmental Science CA at 1-888-283-6847 for information before mixing any pesticide or fertilizer that is not specifically recommended on this label.

#### **APPLICATION INFORMATION:**

TruRange is a dispersible granule that is mixed in water and applied as a spray. TruRange may be applied broadcast using ground spray equipment, fixed wing aircraft or by helicopter. When applying by fixed wing aircraft or helicopter, follow directions under the Aerial Applications section of this label, otherwise refer to the section on Ground Applications when using surface equipment.

#### **MIXING INSTRUCTIONS:**

1. Add the proper amount of TruRange into the necessary volume of water in the spray tank with the agitator running. Continuous agitation is required for a uniform suspension and application.
2. If a tank mix partner is being used add the required amount once TruRange is in suspension.
3. Add a recommended surfactant (non-ionic surfactant at 0.25% v/v or 2.5 L/1000 L spray solution or crop oil concentrate at 1% v/v or 10 L /1000 L spray solution or Merge Adjuvant\* at 1% v/v or 10 L/1000 L spray solution).
4. If an antifoaming agent is required, add this last.

Use spray preparation of TruRange within 48 hours or product degradation may occur. If spray preparation is left standing without agitation, thoroughly agitate before spraying.

Avoid over-filling of spray tank. Mix only enough product for the job at hand. During spray operation, make scheduled checks of spray equipment to help ensure proper application.

#### **SPRAYER CLEANUP:**

Unless the spraying and mixing equipment is dedicated to the uses on this label, immediately after spraying, thoroughly remove all traces of TruRange from mixing and spray equipment as follows:

1. Drain tank; then flush tank, boom and hoses with clean water for a minimum of ten minutes. Visually inspect tank to assure removal of all visible residues of TruRange. If necessary, repeat step 1.
2. Fill the tank with clean water then add one litre HOUSEHOLD AMMONIA (containing a minimum 3% ammonia) per 100 litres of water. Fill boom and hoses with solution and allow sprayer to sit for 15 minutes. Drain.
3. Repeat step 2.
4. Nozzles and screens should be removed and cleaned separately. To remove traces of ammonia, rinse the tank, hoses and booms thoroughly with clean water.

CAUTION: Do not use ammonia with chlorine bleach. Using ammonia with chlorine bleach will release a gas with a musty chlorine odour which may cause eye, nose, throat and lung irritation. Do not clean equipment in an enclosed area.

#### **GROUND APPLICATIONS:**

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

#### **Low Volume Foliar Broadcast**

Apply to broadleaf weeds as full coverage spray to foliage and stems in a minimum spray volume of 200 litres per hectare and to brush species as full coverage spray to foliage and stems in 500 litres spray volume per hectare, using properly calibrated equipment that will ensure uniform coverage. Direct the spray solution to thoroughly wet the foliage of the target plants, but not to the point of runoff.

#### **High Volume Foliar Broadcast**

For control of brush/woody plants up to 2.5 metres in height (unless otherwise indicated), use TruRange at rates of 334-499 grams per hectare in enough water to make 1000 litres of spray solution. Apply as a full coverage spray to foliage, stems and limbs using up to 2000 litres of total spray per hectare depending on plant species, height and density of growth, and on the type of spray equipment used. Do not apply more than 499 grams of TruRange per hectare

#### **SPRAY DRIFT CONTROL:**

The potential for spray drift with ground broadcast applications can be reduced by:

- Applying a coarse spray using large droplet producing nozzle tips.
- Keep the spray boom as low as possible.
- Apply with minimum wind velocity.
- When using a power sprayer and handgun, direct sprays no higher than the tops of the target plants.

#### **AERIAL APPLICATIONS:**

TruRange may be applied by either fixed wing aircraft or helicopter spray equipment. However, do not make applications by fixed wing aircraft unless appropriate buffer zones can be maintained to prevent spray drift out of the target area.

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 10 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) coarse classification. To reduce drift caused by turbulent wingtip vortices, the nozzle distribution along the spray boom length **MUST NOT** exceed 65% of the wing- or rotorspan. For aerial applications near susceptible crops or other desirable plants, use a drift control additive as recommended by the manufacturer, or apply through a "Microfoil" or "Thru-Valve" boom, or use an equivalent drift control system.

In general, aerial application spray volumes range from 30 to 50 liters per hectare. Refer to the tank-mix partner label for additional instructions and precautions.

## **AERIAL APPLICATION PRECAUTIONS**

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.

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

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 the generic label recommendations on the existing ground boom label.

All personnel on the job site must wash hands and face thoroughly before eating and drinking. Protective clothing, aircraft cockpit and vehicle cabs must be decontaminated regularly.

### **Buffer zones:**

Use of the following spray methods or equipment DO NOT require a buffer zone: hand-held or backpack sprayer and spot treatment.

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

## Buffer zones for TruRange

Method of application	Sites		Buffer Zones (metres) Required for the Protection of:		
			Freshwater Habitat of Depths:		Terrestrial habitat
			Less than 1 m	Greater than 1 m	
Field sprayer*	Rangeland, Pastures		5	2	45
Aerial	Rangeland, Pastures	Fixed wing	200	45	800
		Rotary wing	95	30	700

\*For field sprayer application, buffer zones can be reduced with the use of drift reducing spray shields. When using a spray boom fitted with a full shield (shroud, curtain) that extends to the crop canopy, the labelled buffer zone can be reduced by 70%. When using a spray boom where individual nozzles are fitted with cone-shaped shields that are no more than 30 cm above the canopy, the labelled buffer zone can be reduced by 30%.

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

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

### FIELD BIOASSAY:

If rangeland or pasture sites treated with TruRange are to be converted to a food, feed, or fiber agricultural crop, or to a horticultural crop, a field bioassay should be completed before planting the desired crop.

Select a representative area or areas of the field previously treated with TruRange to plant your bioassay crop(s). Be sure to consider factors such as size of field, soil texture, drainage and turn-around areas when selecting the site(s) that are most representative of the soil conditions in the field. On large fields, more than one site may be needed in order to obtain reliable results.

Plant the test strips perpendicular to the direction in which the field was sprayed. The strips should be long enough to cross the width of several spray swaths. Large test strip areas are more reliable than small ones.

Use standard tillage and seeding equipment to plant the bioassay.

Prepare a seed bed and plant the crops and varieties you want the option of growing the following year. It is important to use the same planting time, conditions, techniques and cultural practices you normally use to plant and grow the bioassay crop(s). Also plant into an adjacent area not treated with TruRange to use as a comparison.

As the crop(s) emerges and grows, examine these key points in TruRange treated and non-treated areas:

crop stand	root development	rate of growth
plant colour and vigour	yield	

Allow the bioassay crop(s) to grow to maturity while making your observations.

Do not overspray the test strips with herbicides that may damage the bioassay crop(s).

If the bioassay indicates that TruRange residues are still present do not rotate to other crops until bioassay results indicate that susceptible crops are growing normally.

## INVASIVE SPECIES MANAGEMENT

TruRange can be an important component of integrated vegetation management programs to treat certain invasive and noxious weed species infestations. Consult local agriculture and land management resource specialists and/or invasive plant councils. These organizations can provide guidance on best management practices and the development of integrated vegetation management programs. Rapid response needs to be taken to quickly contain, deny reproduction, and if possible eliminate the invader. TruRange has either been demonstrated to be efficacious on the invasive weed species listed below or on closely related weed species.

Weed	Species
Common crupina	<i>Crupina vulgaris</i>
Iberian starthistle	<i>Centaurea iberica</i>
South African ragwort	<i>Senecio inaequidens</i>
Yellow starthistle	<i>Centaurea solstitialis</i>

Apply a maximum of 499 g/ha of TruRange per year.

## RESISTANCE-MANAGEMENT RECOMMENDATIONS:

For resistance management, please note that TruRange is both a Group 2 and 4 herbicide. Any weed population may contain or develop plants naturally resistant to Group 2 and/ or Group 4 herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same field. Other resistance mechanisms that are not linked to site of action, but specific for individual chemicals, such as enhanced metabolism, may also exist. Appropriate resistance-management strategies should be followed.

To delay herbicide resistance:

- Where possible, rotate the use of TruRange or other Group 2 and 4 herbicides within a growing season (sequence) or among growing seasons with different herbicide groups that control the same weeds in a field.
- Use tank mixtures with herbicides from a different group when such use is permitted. To delay resistance, the less resistance-prone partner should control the target weed(s) as effectively as the more resistance-prone partner.
- Herbicide use should be based on an integrated weed management program that includes scouting, historical information related to herbicide use and crop rotation, and considers tillage (or other mechanical control methods), cultural (for example, higher crop seeding rates; precision fertilizer application method and timing to favour the crop and not the weeds), biological (weed-competitive crops or varieties) and other management practices.
- Monitor weed populations after herbicide application for signs of resistance development (for example, only one weed species on the herbicide label not controlled). If resistance



is suspected, prevent weed seed production in the affected area if possible by an alternative herbicide from a different group. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields, and planting clean seed.

- Have suspected resistant weed seeds tested by a qualified laboratory to confirm resistance and identify alternative herbicide options.
- Contact your local extension specialist or certified crop advisors for any additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.
- For further information or to report suspected resistance, contact your local 2022 Environmental Science CA representative or call 2022 Environmental Science CA toll-free at 1-888-283-6847.

**STORAGE:**

To prevent contamination, store this product away from food or feed.

**DISPOSAL/ DECONTAMINATION:**

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Follow provincial instruction for any required additional cleaning of the container prior to its disposal.
3. Make the empty container unsuitable for further use.
4. Dispose of the container in accordance with provincial requirements.
5. For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

**NOTICE TO USER:**

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