2023-10-05 2023-4807

GROUP 1 HERBICIDE

SHADOW[®] XL

EMULSIFIABLE CONCENTRATE POST-EMERGENCE HERBICIDE

POST-EMERGENCE HERBICIDE FOR CONTROL OF GRASSES IN SEEDLING ALFALFA, PIGEON PEA, LEGUME VEGETABLES (SUCCULENT OR DRIED), EDAMAME, HIGHBUSH BLUEBERRY, CANOLA, BASIL, CORIANDER, DILL, CARAWAY, FENUGREEK, CRANBERRY, FLAX (including low linolenic acid varieties), ORIENTAL (BROWN) MUSTARD (condiment and oilseed types), *BRASSICA CARINATA*, YELLOW MUSTARD, DRY BULB ONION, DRY BULB SHALLOT AND GARLIC, POTATO, PRAIRIE CARNATION, SAFFLOWER, SOYBEAN, SPINACH, SUNFLOWER, RED GARDEN (TABLE) BEET, PARSNIP, CARROT, RADISH, CHERRY (tart and sweet), CERTAIN HERBS, SPICES and HOPS.

COMMERCIAL (AGRICULTURAL)

ACTIVE INGREDIENT: CLETHODIM 120 g/L Warning, contains allergen soy

REGISTRATION NO. 34960 PEST CONTROL PRODUCTS ACT

WARNING: EYE and SKIN IRRITANT

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

NET CONTENTS: (250 mL - 1000 LITRES)

For Product Use Information Call 1-1-800-328-4678

Loveland Products Canada Inc. 789 Donnybrook Drive Dorchester, Ontario N0L 1G5 1-800-328-4678

FOR CHEMICAL EMERGENCY: spill, leak, fire, exposure, or accident call 1-800-561-8273 LOVELAND PRODUCTS CANADA INC.

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PRECAUTIONS:

KEEP OUT OF REACH OF CHILDREN. CAUSES SKIN IRRITATION. Do not get on skin. Avoid contact with skin, eyes and clothing. Wash concentrate from skin or eyes immediately. Do not inhale fumes. Avoid breathing vapours or spray mist. After use, wash hands and other exposed skin. When using, do not eat, drink or smoke. Remove and launder contaminated clothing separately from household laundry before reuse. When handling the concentrate, mixing, loading or during cleanup and repair, wear goggles or face shield, rubber apron, chemical-resistant gloves, rubber boots, long-sleeved shirt and long pants. Wear long-sleeved shirt and long pants during application. In addition, for hand-held application equipment, including backpack sprayer, wear chemical-resistant gloves during application. During application, wear long sleeved shirt, long legged pants and chemical-resistant gloves. Chemical resistant gloves are not required to be worn during groundboom or aerial application.

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

DO NOT enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

ENVIRONMENTAL PRECAUTIONS:

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

Toxic to certain beneficial arthropods (which may include predatory and parasitic insects, spiders, and mites). Minimize spray drift to reduce harmful effects on beneficial arthropods in habitats next to the application site such as hedgerows and woodland.

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

Avoid application when heavy rain is forecast.

Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative filter strip between the treated area and the edge of the water body.

This product demonstrates the properties and characteristics associated with chemicals detected in groundwater. The use of this product in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

This product contains aromatic petroleum distillates that are toxic to aquatic organisms.

FIRST AID:

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

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

If 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 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. This product contains petroleum distillates. Vomiting may cause aspiration pneumonia. Danger from lung aspiration of petroleum based solvents must be weighed against toxicity when considering emptying stomach.

STORAGE AND DISPOSAL

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

DISPOSAL:

RECYCLABLE CONTAINER DISPOSAL: 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.

DISPOSAL OF UNUSED, UNWANTED PRODUCT: 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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Shadow[®] XL EMULSIFIABLE CONCENTRATE POST-EMERGENCE HERBICIDE

GROUP 1 HERBICIDE POST-EMERGENCE HERBICIDE FOR CONTROL OF GRASSES IN SEEDLING ALFALFA, PIGEON PEA, LEGUME VEGETABLES (SUCCULENT OR DRIED), EDAMAME, HIGHBUSH BLUEBERRY, CANOLA, BASIL, CORIANDER, DILL, CARAWAY, FENUGREEK, CRANBERRY, FLAX (including low linolenic acid varieties), ORIENTAL (BROWN) MUSTARD (condiment and oilseed types), *BRASSICA CARINATA*, YELLOW MUSTARD, DRY BULB ONION, DRY BULB SHALLOT, GARLIC, POTATO, PRAIRIE CARNATION, SAFFLOWER, SOYBEAN, SPINACH, SUNFLOWER, RED GARDEN (TABLE) BEET, PARSNIP, CARROT, RADISH, CHERRY (tart and sweet), CERTAIN HERBS, SPICES and HOPS.

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GENERAL INFORMATION:

Shadow[®] **XL** is a selective, post-emergence herbicide for control of grasses in seedling alfalfa, pigeon pea, legume vegetables (succulent or dried), edamame, highbush blueberry, canola, basil, coriander, dill, caraway, fenugreek, cranberry, flax (including low linolenic acid varieties), oriental (brown) mustard (condiment and oilseed types), *Brassica carinata*, yellow mustard, dry bulb onion, dry bulb shallot, garlic, potato, prairie carnation, safflower, soybean, spinach, sunflower, red garden (table) beet, parsnip, carrot, radish, cherry (tart and sweet), certain herbs, spices and hops.

SHADOW XL does not require the addition of a surfactant.

SHADOW XL is a systemic herbicide which is translocated from the treated foliage to the growing points of the leaves, shoots and roots. Uptake into the plant is primarily through its leaves. Thorough coverage of the foliage is important for consistent grass control. Susceptible grasses that are actively growing will undergo a burn-back and colour change after treatment. Leaf foliage will first change from green to yellowish, then purplish and finally brown colour. The time required for complete control is normally 7 to 21 days following treatment, depending on growing conditions and crop competition.

PRECAUTIONS:

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ENVIRONMENTAL PRECAUTIONS:

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

Toxic to certain beneficial arthropods (which may include predatory and parasitic insects, spiders, and mites). Minimize spray drift to reduce harmful effects on beneficial arthropods in habitats next to the application site such as hedgerows and woodland.

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

Avoid application when heavy rain is forecast.

Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative filter strip between the treated area and the edge of the water body.

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DISPOSAL OF UNUSED, UNWANTED PRODUCT: 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.

DIRECTIONS FOR USE:

SHADOW XL is to be used only on seedling alfalfa, pigeon pea, legume vegetables (succulent or dried), edamame, highbush blueberry, canola, basil, coriander, dill, caraway, fenugreek, cranberry, flax (including low linolenic acid varieties), oriental (brown) mustard (condiment and oilseed types), *Brassica carinata*, yellow mustard, dry bulb onion, dry bulb shallot, garlic, potato, prairie carnation, safflower, soybean, spinach, sunflower, red garden (table) beet, parsnip, carrot, radish, cherry (tart and sweet), certain herbs, spices and hops.

Not for use in greenhouses.

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.

A 30-day plant-back interval should be observed for all unlabelled crops.

APPLICATION INSTRUCTIONS

TIME OF APPLICATION:

Apply **SHADOW XL** when grasses and volunteer cereals are in the 2 to 6 leaf stage as specified under Application Rates of **SHADOW XL**. Most effective control is achieved when application is made prior to tillering when grasses are small and actively growing.

For suppression or control of quackgrass, apply **SHADOW XL** when the quackgrass is in the 2 to 6 leaf stage and 6 to 15 cm in height. Most effective results are achieved when application is made at the 3 to 5 leaf stage, when the canopy is uniform and actively growing.

SHADOW XL will be less effective when plants are stressed by lack of moisture, excessive moisture, low-temperature and/or very low relative humidity. Regrowth by tillering may occur if application is made under any of the above stress conditions. In wide row crops, where the canopy may be slow to close, cultivation may be necessary to control grasses that emerge after treatment.

For chickpea, apply **SHADOW XL** post-emergence, when chickpea reaches the 9 node stage (18 cm height maximum) at a maximum of one application per year.

For dill and fenugreek, apply **SHADOW XL** post-emergence, when dill or fenugreek is in the 3 to 5 leaf stage at a maximum of one application per year.

For coriander, or prairie carnation, apply **SHADOW XL** post-emergence, when coriander or prairie carnation is in the 2 to 5 leaf stage. A maximum of one application may be made per year.

For safflower, apply **SHADOW XL** post-emergence, when safflower is in the 6 to 8 leaf stage at a maximum of one application per year.

Cranberry is tolerant to **SHADOW XL** at all stages of growth, however, do not apply **SHADOW XL** between the hook stage and full fruit set.

For dry bulb onion, dry bulb shallot and garlic, apply **SHADOW XL** post-emergence, when crops are in the 1 to 4 leaf stage.

Apply **SHADOW XL** only to established sweet and tart cherry trees. The pre-harvest interval outlined in the Crop Recommendations table must be followed to avoid excessive crop residues.

All other labelled crops are tolerant to **SHADOW XL** at all stages of growth. However, the pre-harvest interval outlined in the Crop Recommendations table must be followed to avoid excessive crop residues.

APPLICATION RATES OF SHADOW XL:

Rates of use are given below to control various grass species. Refer to crop section for the maximum use rate on each crop.

Grass Species	Leaf Stage	Application Rate of SHADOW XL
*Foxtail (green and yellow) Volunteer cereals (wheat, barley, oats) Wild oat	2 to 4	
Barnyard grass Fall panicum Proso millet Volunteer canary grass Volunteer corn Witchgrass	2 to 6	*0.25 L/ha
Barnyard grass Fall panicum Foxtail barley Foxtail (green and yellow) Japanese brome Large crabgrass Persian darnel Proso millet	2 to 6	0.38 L/ha

Quackgrass (suppression) Smooth crabgrass Volunteer barley Volunteer canary grass Volunteer corn Volunteer oat Volunteer wheat Wild oat Witchgrass

Quackgrass (control**)	2 to 6	0.75 L/ha
Annual bluegrass (suppression)	2 to 6	0.75 L/ha
Foxtail barley**	2 to 6 leaf	
Japanese brome**	maximum 3 tillers	0.75 L/ha

***SHADOW XL** applied at 0.25 L/ha for the control of weeds listed in this section of the table should only be applied under the following conditions:

- Good crop stand
- Early application (as in above table, prior to tillering)
- Do not tank-mix with other pesticides
- Do not apply to volunteer winter cereals
- Light to moderate weed infestation
- Adequate moisture and fertility
- Absence of stress, good growing conditions

If any one of the above conditions are not present at the time of application, use 0.38 L/ha rate of **SHADOW XL**.

** For adequate control, use a minimum spray volume of 100 L/ha.

CROP RECOMMENDATIONS:

Crops	Maximum Application Rate of SHADOW XL	Application Method ⁷	Pre- Harvest Interval
Seedling Alfalfa	0.75 L/ha	Ground application only	30 days
Pigeon Pea ^{1,2}	0.38 L/ha	Ground and aerial application	75 days
Edamame and Edible-podded legume vegetables (Crop subgroup 6A): Bean (<i>Phaseolus</i> spp.) (includes runner bean, snap bean, wax bean), Bean (<i>Vigna</i> spp.) (includes asparagus bean, Chinese longbean, moth bean, yardlong bean), Jackbean (<i>Canavalia ensiformis</i>), Pea (<i>Pisum</i> spp.) (includes dwarf pea,	0.38 L/ha	Ground application only	21 days

edible-pod pea, snow pea, sugar snap pea), Sword bean (<i>Canavalia gladiata</i>). Succulent shelled peas and beans (Crop subgroup 6B) (except pigeon pea): Bean (<i>Phaseolus</i> spp.) (includes lima bean, green bean), Bean (<i>Vigna</i> spp.) (includes blackeyed pea, cowpea, southern pea), Broad bean (fava bean) (<i>Vicia faba</i>), Pea (<i>Pisum</i> spp.) (includes English pea, garden pea, green pea)			
Dried Shelled Pea and Bean (Crop subgroup 6C) (except soybean, field pea, lentils, pigeon pea) including: Bean (<i>Lupinus</i> spp.) (includes grain lupin, sweet lupin, white lupin, white sweet lupin); Bean (<i>Phaseolus</i> spp.) (includes field bean, kidney bean, lima bean, 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); Broad bean (fava bean) (<i>Vicia faba</i>); Chickpea (garbanzo bean) (<i>Cicer arietinum</i>); Guar (<i>Cyamopsis tetragonoloba</i>); Lablab bean (hyacinth bean) (<i>Lablab purpureus</i>); ^{1,2}	0.38 L/ha	Ground and aerial application	60 days
Caraway, Coriander (cilantro) ^{1,5}	0.75 L/ha	Ground application only	60 days for seed 30 days for leaves
Angelica; balm (lemon balm); basil; borage; burnet; chamomile; catnip; chervil; clary; costmary; culantro (leaf); horehound; hyssop; lavender; lovage; marigold; marjoram (includes sweet or annual marjoram, wild marjoram or oregano and pot marjoram); nasturtium; parsley (dried); pennyroyal; rosemary; rue; sage; summer and winter savory; sweet bay (bay leaf); tansy; tarragon; thyme; wintergreen; woodruff; and wormwood ^{1,2,4,5}	0.38 L/ha	Ground application only	30 days
Anise (anise seed); caraway (black); celery seed; culantro (seed); cumin; fennel [common and Florence (seed)];	0.38 L/ha	Ground application only	60 days

juniper berry; lovage (seed); mustard (seed); poppy (seed); and Saffron. ^{1,2,4,5}			
Cherry (sweet and tart) ^{1, 5, 8} (established trees)	0.75 L/ha	Ground application only	14 days
Highbush blueberry ^{1,4,5}	0.75 L/ha	Ground application only	14 days
Canola	0.75 L/ha	Ground and aerial application	60 days
Carrot Red garden (table) beet, Parsnip Radish ^{3,5}	0.75 L/ha	Ground application only	30 days
Cranberry ^{1,2,5}	0.75 L/ha	Ground application only	30 days
Chive ^{1,5}	0.75 L/ha	Ground application only	30 days
Dill ^{1,5}	0.75 L/ha	Ground application only	30 days (dillweed leaves) 40 days (dill seed)
Flax (including low linolenic acid varieties)	0.75 L/ha	Ground and aerial application	60 days
Fenugreek ^{1,3,5}	0.75 L/ha	Ground application only	30 days (leaf and seed)
Field Pea	0.75 L/ha	Ground and aerial application	75 days
Hops ^{1,4,5}	0.75 L/ha	Ground application only	21 days
Lentils	0.75 L/ha	Ground and aerial application	60 days
Oriental (Brown) Mustard (condiment and oilseed types)	0.75 L/ha	Ground and aerial application	60 days
Yellow Mustard	0.75 L/ha	Ground and aerial application	60 days

Brassica carinata	0.75 L/ha	Ground and aerial application	60 days
Dry Bulb Onion, Dry Bulb Shallot and Garlic ^{1,5}	0.75 L/ha	Ground application only	45 days
Potato	0.75 L/ha	Ground and aerial application	60 days
Prairie Carnation ^{1,5,6}	0.38 L/ha	Ground application only	N/A
Safflower ^{1,5}	0.75 L/ha	Ground application only	70 days
Soybean	0.75 L/ha	Ground and aerial application	75 days
Spinach ^{3,5}	0.38 L/ha	Ground application only	14 days
Sunflower	0.75 L/ha	Ground and aerial application	72 days

1. Apply a maximum of one application per year.

- 2. NOTE: Varieties of this crop or crops in this crop group may vary in their tolerance to herbicides, including SHADOW XL. Since not all crops or crop varieties have been tested for tolerance to SHADOW XL, first use of SHADOW XL should be limited to a small area of each crop or variety to confirm tolerance prior to adoption as a general field practice. Additionally, consult your supplier for information on the tolerance of specific varieties to SHADOW XL.
- 3. Apply a maximum of two applications per year. If repeat application is required, allow at least 14 days between first and second application.
- 4. Apply **SHADOW XL** as a broadcast spray directed to the ground.
- 5. Refer to section "MINOR USES" in this label for additional use instructions.
- 6. Do not harvest treated prairie carnations for human consumption.
- 7. SPRAY VOLUME FOR AERIAL APPLICATION: Apply in 28 to 55 L/ha. Increase spray volumes up to 100L/ha as grass or crop foliage becomes dense.
- 8. Do not apply **SHADOW XL** directly over the top of the sweet and tart cherry trees. Direct the spray at the base of the tree where grassy weeds are growing. If **SHADOW XL** is improperly applied, crop injury can occur.

TANK-MIXES:

For broader spectrum of weed control, **SHADOW XL** may be mixed with one of the herbicides listed in this section. When tank mixes are permitted, read and observe all label

directions including rates and restrictions for each product used in the tank mix. Follow the more stringent label precautionary measures for mixing, loading and applying as stated on both product labels.

When applied according to label directions, tank mixes control weeds listed on the **SHADOW XL** when applied alone, plus weeds listed on the tank mix partners label. Refer to the **Shadow XL** and tank mix partner labels for a list of weeds and staging. If broadleaf weeds and grass weeds are not in the recommended treatment growth stage at the same time during application, then separate applications should be made. Do not apply tank mixes to plants under stress.

		TANK MIX P	ARTNER	
CROP	SHADOW XL RATE	PARTNER	RATE	REMARKS
CANOLA (glufosinate ammonium	0.126 L/ha	LIBERTY 150SN or INTERLINE Herbicide (Prairie Provinces and	2.67 or 4.0 L/ha	 Apply to glufosinate ammonium tolerant canola varieties (varieties or hybrids labelled LibertyLink). Ground application in a minimum of 110 L/ha spray volume. Aerial application in a minimum of 55 L/ha spray volume at a pressure of 300 kPa. Canola growth stage from cotyledon up to early bolting. Apply when wild oat, volunteer wheat and green foxtail are in the 1 to 5 leaf stage.
tolerant)	0.38 L/ha	Interior of British Columbia including Peace River region ONLY)	3.33 or 4.0 L/ha	 Apply to glufosinate ammonium tolerant canola varieties (varieties or hybrids labelled LibertyLink). Ground application in a minimum of 110 L/ha spray volume. Aerial application in a minimum of 55 L/ha spray volume at a pressure of 300 kPa. Canola growth stage from cotyledon up to early bolting. Weeds include foxtail barley at 1 to 4 leaf stage

TANK MIXES

				with a maximum 2 tillers and spring germinated Japanese and downy brome at 1 to 6 leaf stage up to the emergence of the 1 st tiller as well as weeds listed on both tank-mix partner labels.
	0.126 L/ha	FACET L Herbicide + LIBERTY 150SN or INTERLINE Herbicide (Prairie Provinces and Interior of British Columbia including Peace River region ONLY)	0.28 L/ha + 3.33 L/ha	 Apply to glufosinate ammonium tolerant canola varieties (varieties or hybrids labelled LibertyLink). Ground application in a minimum of 100 L/ha spray volume. Canola growth stage from 2 to 6 leaf. Tank mix is for enhanced and more consistent control of cleavers and annual grasses.
	0.126 L/ha	LIBERTY 200SN (Eastern Canada and British Columbia ONLY)	2.0 to 2.5 L/ha	 Apply to glufosinate ammonium tolerant canola varieties (varieties or hybrids labelled LibertyLink). Ground application in a minimum of 110 L/ha spray volume. Canola growth stage from cotyledon up to early bolting. Apply when wild oat, volunteer wheat, volunteer oat and green foxtail are in the 1 to 5 leaf stage.
CANOLA	0.38 L/ha	LONTREL 360 Herbicide	0.42 to 0.83 L/ha	 Including all types of canola. Ground application in a minimum of 100 L/ha spray volume. Canola growth stage from 2 to 6 leaf. Canada thistle¹ should be between rosette to pre- bud stage. For season-long control of wild buckwheat use 0.56 L/ha of LONTREL 360 Herbicide

				- Including all types of
		MUSTER Herbicide	20 to 30 g/ha	 canola Ground application in a minimum of 100 L/ha spray volume. Canola growth stage from 2 leaf to the beginning of bolting.
		BUCTRIL M Herbicide	1 L/ha	 Including low linolenic acid varieties of flax. Ground application in 55 to 100 L/ha spray volume Flax growth stage from 5 cm plant height to bud (ideal stage is 5 to 10 cm in height).
FLAX	0.38 to 0.75 L/ha	MCPA ESTER Herbicide	Refer to Labe for MCPA Ester	 EXCLUDING low linolenic acid varieties of flax. Ground application in a minimum of 100 L/ha spray volume. Aerial application in a minimum of 30 L/ha. spray volume at 235 kPa. Flax growth stage 5 cm plant height up to bud stage. Do not apply after the early bud stage.
	0.281/ba	CURTAIL M Herbicide	1.5 to 2 L/ha	 Including low linolenic acid varieties of flax. Ground application in a minimum of 100 L/ha spray volume. Flax growth stage from 5 to 15 cm plant height. Canada thistle should be between 10 cm and the pre-bud stage.
	0.38 L/ha	LONTREL 360 Herbicide	0.56 to 0.83 L/ha	 Including low linolenic acid varieties of flax. Ground application in a minimum of 100 L/ha spray volume. Flax growth stage 5 to 10 cm plant height. Canada thistle¹ should be between rosette to pre- bud stage.
FIELD PEA	0.38 L/ha	PURSUIT Herbicide	0.21 L/ha	 Ground application in a minimum of 100 L/ha spray volume.

				 Field pea growth stage up to the sixth (6th) trifoliate.
SOYBEAN (glyphosate tolerant)	0.38 L/ha	GLYPHOSATE Products (or ROUNDUP WEATHERMAX Herbicide)	900 to 1800 g ae/ha (or Roundup Weathermax 540 g/L at 1.67 to 3.33 L/ha)	 Apply to glyphosate tolerant soybean. Tank mix with glyphosate products registered for use on glyphosate tolerant soybean. Ground application in a minimum of 100 L/ha spray volume. Soybean growth stage 1st trifoliate up to flowering.

¹Canada thistle:

- 0.42 L LONTREL 360/ha: top growth control for 6 to 8 weeks
- 0.56 L LONTREL 360/ha: season-long control
- 0.83 L LONTREL 360/ha: control into following year

MIXING INSTRUCTIONS:

- 1. Thoroughly clean the sprayer by flushing the system with water containing detergent.
- 2. Fill clean spray tank half full with clean water. Start the agitation system.
- 3. Add the required amount of the tank mix partner. When tank mixing FACET L Herbicide, add FACET L first, agitate and then added the correct amount of LIBERTY 150SN or INTERLINE Herbicide. Continue to agitate.
- 4. Add the correct amount of **SHADOW XL** along with the remaining amount of water necessary to fill the spray tank.
- 5. Continue to agitate or run the by-pass system and spray out immediately.
- 6. After any break in the spraying operation, agitate thoroughly before spraying again. Check inside the tank to ensure that sprayer agitation is sufficient to re-mix the spray materials. Do not allow the mixture to sit overnight. In the case of tank mixtures, settling may occur if agitation is not continuous.
- 7. If an oil film starts to build up in the tank, drain and clean the tank with a strong detergent solution.
- 8. Immediately after use, thoroughly clean the sprayer by flushing the system with clean water containing detergent.

CROP RECOMMENDATIONS (USER REQUESTED MINOR USE LABEL EXPANSION CROPS)

DIRECTIONS FOR USE

The DIRECTIONS FOR USE for the uses described in this section of the label were developed by persons other than Loveland Products Canada Inc. under the User Requested Minor Use Label Expansion program. For these uses, Loveland Products 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.

USER REQUESTED MINOR USE LABEL EXPANSION CROPS

CROP	Weeds	SHADO	Remarks
	Controlled	W XL	
PRAIRIE CARNATION	Annual	0.38 L/ha	TIME OF APPLICATION: Apply
	weeds listed		SHADOW XL post-emergence of
	on SHADOW		weeds and crop.
	XL label.		Angles a gravitation of an anglisation
	Refer to weed/rate		Apply a maximum of one application
	chart in this		per year using ground equipment.
	label.		Apply in a minimum spray volume of
			110 L/ha.
			110 L/IIa.
			Do not harvest treated prairie
			carnations for human consumption.
			Ground application only.
Edamame, Edible-podded	Labelled	0.38 L/ha	TIME OF APPLICATION:
legume vegetables (Crop	grass weeds.	0.00 2/10	Apply SHADOW XL postemergence of
subgroup 6A) (excluding	Refer to		weeds and crop.
pigeon pea and soybean):	weed/rate		·
Bean (<i>Phaseolus</i> spp.)	chart in this		Apply a maximum of one application
(includes runner bean, snap	label.		per year
bean, wax bean), Bean			using ground equipment.
(<i>Vigna</i> spp.) (includes			
asparagus bean, Chinese			Apply in a minimum spray
longbean, moth bean,			volume of 110 L/ha.
yardlong bean), Jackbean			
(Canavalia ensiformis), Pea			Observe a PHI of 21 days.
(<i>Pisum</i> spp.) (includes dwarf			
pea, edible-pod pea, snow			Ground application only.
pea, sugar snap pea), Sword			
bean (<i>Canavalia gladiata</i>).			
Succulent shelled peas			
and beans (Crop subgroup			
6B) (except pigeon pea):			
Bean (<i>Phaseolus</i> spp.)			
(includes lima bean, green			
bean), Bean (<i>Vigna</i> spp.)			
(includes blackeyed pea,			

cowpea, southern pea), Broad bean (fava bean) (<i>Vicia faba</i>), Pea (<i>Pisum</i> spp.) (includes English pea, garden pea, green pea).			
CHERRY (SWEET AND TART) (established trees)	Labelled grass weeds. Refer to weed/rate chart in this label.	0.38 – 0.75 L/ha	 TIME OF APPLICATION: Apply SHADOW XL to established sweet and tart cherry trees, post-emergence of weeds. Do not apply SHADOW XL directly over the top of the trees. Direct the spray at the base of the tree where grassy weeds are growing. If SHADOW XL is improperly applied, crop injury can occur. Apply a maximum of one application per year using ground equipment. Apply in a minimum spray volume of 100 L/ha. Observe a PHI of 14 days. Ground application only.
HIGHBUSH BLUEBERRY	Labelled grass weeds. Refer to weed/rate chart in this label.	0.38 - 0.75 L/ha	 TIME OF APPLICATION: Apply SHADOW XL post-emergence of weeds and crop. Apply a maximum of one application per year, using ground equipment. Apply as a broadcast spray directed to the ground. Apply in a minimum spray volume of 100 L/ha. Observe a PHI of 14 days. Ground application only.

CORIANDER, (Cilantro), CARAWAY	Labelled grass weeds. Refer to weed/rate chart in this label.	0.38 - 0.75 L/ha	 TIME OF APPLICATION: Apply SHADOW XL post-emergent when the crop is in the 2 to 5 leaf stage. Apply a maximum of one application per year, using ground equipment. Observe a PHI of 30 days for leaves and 60 days for seed. Ground application only.
DILL	Labelled grass weeds. Refer to weed/rate chart on this label.	0.38 - 0.75 L/ha	TIME OF APPLICATION: Apply SHADOW XL post-emergence of weeds and crop when dill is in the 3-5 leaf stage. Apply a maximum of one application per year using ground equipment. Apply a minimum spray volume of 100 L/ha. Observe a PHI of 30 days for dillweed leaves and a PHI of 40 days for dill seed. Ground application only.
CHIVE	Labelled grass weeds. Refer to weed/rate chart in this label.	0.38 – 0.75 L/ha	TIME OF APPLICATION: Apply a maximum of one application per year, post-emergent using ground equipment. Apply in a minimum spray volume of 110 L/ha. Observe a PHI of 30 days. Ground application only.
Angelica; balm (lemon balm); basil; borage; burnet; chamomile; catnip; chervil; clary; costmary; culantro (leaf); horehound; hyssop; lavender; lovage; marigold; marjoram (includes sweet or annual marjoram, wild marjoram or oregano and pot marjoram); nasturtium; parsley (dried); pennyroyal; rosemary; rue; sage; savory, summer and winter; sweet bay (bay leaf); tansy; tarragon; thyme; wintergreen; woodruff; and wormwood	Labelled grass weeds. Refer to weed/rate chart in this label.	0.38 L/ha	TIME OF APPLICATION: Apply SHADOW XL post-emergence of weeds and crop. Apply a maximum of one application per year using ground equipment. Apply as a broadcast spray directed to the ground. Apply in a minimum spray volume of 110 L/ha. Observe a PHI of 30 days. Ground application only.
Anise (anise seed), caraway (black); celery seed; cilantro (seed); cumin; fennel [common and Florence (seed)]; juniper berry; lovage (seed); mustard (seed); poppy (seed); and saffron	Labelled grass weeds. Refer to weed/rate chart in this label.	0.38 L/ha	TIME OF APPLICATION : Apply SHADOW XL post-emergence of weeds and crop. Apply a maximum of one application per year using ground equipment. Apply as a broadcast spray

HOPS	Labelled grass weeds. Refer to weed/rate chart in this label.	0.38 - 0.75 L/ha	directed to the ground. Apply in a minimum spray volume of 110 L/ha. Observe a PHI of 60 days. Ground application only. TIME OF APPLICATION: Apply SHADOW XL post-emergence of weeds and crop. Apply a maximum of one application per year, using ground equipment. Apply as a broadcast spray directed to the ground. Apply in a minimum spray volume of 110 L/ha. Observe a PHI of 21 days. Ground application only.
FENUGREEK	Labelled grass weeds. Refer to weed/rate chart in this label. Labelled	0.25 – 0.75 L/ha 0.38 – 0.75	TIME OF APPLICATION: Apply SHADOW XL post-emergent when fenugreek is in the 3 to 5 leaf stage. Apply a maximum of one application per year, using ground equipment. Apply in a minimum spray volume of 100L/ha. Observe a PHI of 30 days for leaves and seed. Ground application only. TIME OF APPLICATION: Apply
BULB SHALLOT and GARLIC	grass weeds. Refer to weed/rate chart in this label.	L/ha	 SHADOW XL post-emergent when the crop is in the 1 to 4 leaf stage. Apply a maximum of one application per year, using ground equipment. Observe a PHI of 45 days. Ground application only.
SAFFLOWER	Labelled grass weeds. Refer to weed/rate chart in this label.	0.38 - 0.75 L/ha	 TIME OF APPLICATION: Apply SHADOW XL post-emergent when safflower is in the 6-8 leaf stage. Apply a maximum of one application per year using ground equipment. Apply in a minimum spray volume of 100 litres of water per hectare. Observe a PHI of 70 days. Ground application only.

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SPINACH	Labelled grass weeds. Refer to weed/rate chart in this label.	0.25 – 0.38 L/ha	TIME OF APPLICATION: Apply a maximum of two applications per year with 14 days between applications, post emergent by ground application when grassy weeds are in the 2 to 6 leaf stage. Observe a PHI of 14 days. Ground application only.		
CRANBERRY	Labelled grass weeds. Refer to weed/rate chart in this label.	0.38 - 0.75 L/ha	TIME OF APPLICATION: ApplySHADOW XL post-emergence ofweeds and crop. Do not applybetween the hook stage and full fruitset. Apply a maximum of oneapplication per year using groundequipment. Apply in a minimum sprayvolume of 110 L of water /ha.Observe a PHI of 30 days.Ground application only.		
RED GARDEN (TABLE) BEET, PARSNIP, CARROT, RADISH	Labelled grass weeds. Refer to weed/rate chart in this label.	0.38 - 0.75 L/ha	 TIME OF APPLICATION: Apply SHADOW XL post-emergence of weeds and crop using ground equipment. Apply a maximum of two applications per year. If repeat application is required, allow at least 14 days between first and second application. Do not apply more than 0.75 L/ha (90 grams ai/ha) per crop year. Apply in a minimum spray volume of 110 L/ha. Observe a PHI of 30 days. Ground application only. 		

APPLICATION INSTRUCTIONS:

GROUND APPLICATION

Water volume and spray pressure:

For ground application, use sprayers equipped with standard flat fan nozzles. For optimum spray coverage, use nozzles tilted 45° forward.

The use of flood jet or hollow cone nozzles is not recommended because of uneven and inadequate spray coverage. Thorough and uniform spray coverage over the entire leaf area of the target weeds is necessary for optimum weed control.

Thoroughly clean all screens to prevent nozzle clogging, especially when spray volumes of 55 to 110 L/ha are used.

For ground applications, use spray volumes of 55 to 225 L/ha and a minimum of 275 kPa pressure. For applications to dense weed infestations or to dense crop canopies, use a minimum of 110 L/ha spray volume at pressures of 275 to 425 kPa.

For legume vegetables (succulent or dried) (except soybeans) and edamame, a minimum spray volume of 110 L/ha is recommended.

AERIAL APPLICATION

Water volume and spray pressure:

Apply **SHADOW XL** alone or in tank mixes (ONLY with the recommended tank mix partners that are registered for aerial use) in no less than 28 L/ha spray volume at a pressure no less than 300 kPa.

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 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.

Aerial 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 pilots have communication capabilities at each treatment site at the time of application.
- The field crew and the mixer/loaders must wear goggles or face shield, rubber apron, chemical-resistant gloves, rubber boots, long sleeved shirt and long-legged pants.
- All personnel on the job site must wash hands and face thoroughly before eating and drinking. Protective clothing, aircraft cockpit and vehicle cabs must be decontaminated regularly.

Product Specific Precautions:

• Read and understand the entire label before opening this product. If you have questions, call the manufacturer at 1-800-328-4678 or obtain technical advice from the distributor or your provincial agricultural representative.

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

<u>Aerial application</u>: 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.

Spray Buffer zones:

A spray buffer zone is NOT required for:

• uses with hand-held application equipment permitted on this label.

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) and sensitive freshwater habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands).

Method of application	Сгор	Spray Buffer Zones (metres) Required for the Protection of:			
		Freshwater Habitat of Depths:		Terrestrial	
		Less than 1 m	Greater than 1 m	Habitat	
Field sprayer	Seedling alfalfa, highbush blueberry, cherry, cranberry, caraway, chive, coriander, dill, fenugreek, dry bulb onion, dry bulb shallot, safflower, canola, carrot, flax (including low linolenic varieties), field pea, hops, lentils, oriental (brown) mustard (condiment and oilseed types), yellow mustard, Brassica carinata, potato, parsnip, radish, red garden (table) beet, soybean, sunflower	1	1	2	
	Spinach, Edamame, Edible-podded Legume (crop subgroup 6A) vegetables, Succulent shelled peas and beans (crop subgroup 6B),	1	1	1	

	bean (Lupines, Phaseolu Vigna spp.), broad bean guar, lablab bean, Prairie pigeon pea, various herk spices (except chive, cou dill)				
Aerial	Canola, flax (including	Fixed wing	10	1	60
Bean (<i>Lupines</i> , <i>Phaseolus</i> , and <i>Vigna</i> spp.), broad bean, chickpea, guar, lablab bean, pigeon pea	Rotary wing	10	1	50	
		Fixed wing	4	1	30
	<i>Phaseolus</i> , and <i>Vigna</i> spp.), broad bean, chickpea, guar, lablab	Rotary wing	1	1	30

Cherry (sweet and tart):

Use of the following spray methods or equipment DO NOT require a spray buffer zone: hand-held or backpack sprayer and spot treatment, inter-row hooded sprayer, low-clearance hooded or shielded sprayers that ensure spray drift does not come in contact with orchard crop fruit or foliage.

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 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 web site.

RESTRICTIONS AND LIMITATIONS:

- 1. Use only for crops listed on the label.
- 2. Thorough preplant tillage operations are required to fields where sod or forage grass crops may have grown in the previous year.
- 3. Take necessary precautions to avoid sprayer overlaps.
- 4. Rainfall within one hour of application may reduce the effectiveness of the spray.

- 5. Do not mix or apply **SHADOW XL** with any other additive, pesticide or with fertilizer except as specifically recommended on the label.
- 6. Allow 4 days between application of SHADOW XL and any other chemical not recommended as a tank-mix combination on the label.
- 7. Do not apply more than 0.75 L/ha (90 grams ai/ha) per year.
- 8. Do not use crops for grazing of livestock or green feed following application of SHADOW XL until after the appropriate interval as specified in the crop recommendations table has been observed. Do not cut treated crops for forage until the appropriate interval as specified in the crop recommendations table has been observed.
- 9. SHADOW XL may be applied by air for certain crops specified in this label.
- 10. DO NOT enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

HERBICIDE RESISTANCE MANAGEMENT RECOMMENDATIONS:

For resistance management, SHADOW XL is a Group 1 herbicide. Any weed population may contain or develop plants naturally resistant to SHADOW XL and other Group 1 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 SHADOW XL or other Group 1 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 resistance-management and/or integrated weed-management pesticide recommendations for specific crops and weed biotypes.
- For further information or to report suspected resistance, contact Loveland Products Canada Inc. 1-800-328-4678.

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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