

2007-7644
07-DEC-2007

GROUP	4	HERBICIDE
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NUFARM

Estakil(R) LV 700 2,4-D
LOW VOLATILE LIQUID HERBICIDE
CONTAINS 2,4-D

EMULSIFIABLE CONCENTRATE

GUARANTEE: 2,4-D 658 g/L Isomer Specific (present as iso-octyl ester)

READ THE LABEL AND ATTACHED BOOKLET BEFORE USING

For control of broadleaf weeds in
barley, wheat, and rye

AGRICULTURAL

REGISTRATION NO. 14623

PEST CONTROL PRODUCTS ACT

WARNING POISON

10.3 Litres

Nufarm Agriculture Inc.
5507 1st Street SE
Calgary, Alberta
T2H 1H9

24 HOUR EMERGENCY RESPONSE NUMBER
1-800-424-9300

Estakil(R) is a registered trademark of Nufarm Limited

PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN

Avoid contact with eyes, skin and clothing. May cause skin irritation. Do not breathe spray mist or vapours. Avoid spray or vapour drift onto susceptible plants such as grapes, tomatoes, tobacco, sugarbeets, sunflowers, beans, turnips, cauliflower, cabbages, alfalfa, clover, peas, potatoes, ornamental trees, shrubs or flowers, fruit trees, lawns, most vegetable crops or other desirable vegetation. Danger of drift is greater during aerial spraying. Do not spray when there is any danger of wind or on exceptionally hot days, over 27°C. Drift from spray may be reduced by using high volume sprays under low pressure, coarse sprays, and drop nozzles. Do not contaminate any body of water. Avoid contamination of foods. Do not use in a greenhouse. Keep in original container during storage. Do not store near or in same room as seeds, feeds, fertilizers or pesticides. Keep away from fire or open flame, and other sources of heat. Clean spray equipment thoroughly after use. Do not use spray equipment for other purposes. Do not reuse empty containers.

If this pest control product is to be used on a commodity that may be exported to the U.S. and you require information on acceptable residue levels in the U.S., visit CropLife Canada's web site at: www.croplife.ca.

TRANSFER SYSTEM

For containers larger than 20 litres: Use a transfer system that avoids open pouring when transferring the liquid concentrate from such containers into the spray tank.

FIRST AID

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 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.

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

TOXICOLOGICAL INFORMATION

Treat symptomatically.

PROTECTIVE CLOTHING AND EQUIPMENT

Handling the concentrate (mixing and loading): wear long-sleeved shirt, long pants, chemical-resistant gloves, socks and shoes, and protective eye wear (face shield or safety glasses). Rinse gloves before removal.

Coveralls or a chemical-resistant apron should also be worn when open pouring from containers greater than 5 L.

Handling the dilute spray solution (during application or repairing or cleaning equipment): wear a long-sleeved shirt, long pants, chemical-resistant gloves, socks and shoes. Rinse gloves before removal.

Gloves are not required during application when applicator is in an enclosed tractor in an enclosed airplane cockpit.

OPERATOR USE PRECAUTIONS

- Wear freshly laundered clothing and clean protective equipment daily.
- Rinse gloves before removal.
- Wash hands before eating, drinking, using tobacco or using the toilet.
- If herbicide penetrates clothing, remove immediately, then wash thoroughly and put on clean clothing. Throw away clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate.
- After using this product, remove clothing and launder separately and promptly and thoroughly wash hands and exposed skin with soap and water. Follow manufacturer's instructions for cleaning personal protective clothing and equipment. If no such instructions for washables are provided, use detergent and hot water. Keep and wash clothing and personal protective equipment separate from household laundry.
- After work, remove all clothing and shower using soap and water.

STORAGE

May be stored at any temperature. Insecticides and fungicides should be segregated from herbicides so as to prevent the possibility of cross-contamination. **SHAKE WELL BEFORE USING.**

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

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DIRECTIONS FOR USE

Generic Aerial Application Label Instructions

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 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.

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 *Basic Knowledge Requirements for Pesticide Education in Canada: Applicator Core* and *Aerial Module*, developed by CAPCO.

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.

Product Specific Precautions

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

AERIAL SPRAYING:

This product may be applied with ground or aerial spraying equipment. Aerial spraying is quite specialized, hence qualified technical guidance should be obtained for each job. Employ a competent, reliable operator and become familiar with laws governing the application of herbicides. Do not use aerial sprays in areas where possible drift may injure valuable broadleaf crops.

USE PRECAUTIONS FOR AERIAL APPLICATION TO CEREAL CROPS, PASTURE, RANGELAND, STUBBLE AND SUMMERFALLOW:

- Avoid direct applications to any body of water. Do not contaminate water through spray drift or by cleaning of equipment or disposal of wastes.
- Use a minimum of 30 L/ha total spray volume. Use boom pressure of 235 kPa or less. Avoid placing nozzles where spray will enter wing tip vortices.
- Do not apply this product directly to, or otherwise permit it to come into direct contact with desirable crops or other desirable broadleaf plants or non-target species and do not permit spray mists to drift onto them.
- Coarse sprays are less likely to drift, therefore, use only nozzles or nozzle configuration which minimize the production of fine spray drops. Do not angle nozzles forward into the airstream and do not increase spray volume by increasing nozzle pressure. When spraying, avoid combination of pressure and nozzle type that will result in fine particles (mist) which are more likely to drift. A spray thickening agent or drift retardant may be used with this product to aid in reducing spray drift.
- Do not use human flaggers.
- **Avoid Spray Drift:** Apply only when there is little or no hazard from spray drift. Small quantities of the spray, which may not be visible, may seriously injure susceptible crops and damage sensitive non-target habitat. A method must be used to detect air movement, lapse conditions, or temperature inversions (stable air) such as the use of balloons or a continuous smoke column at or near the spray site or a smoke generator on the spray equipment. If the smoke develops into layers or indicates a potential for hazardous spray drift, do not spray.

- **Buffer Zones:** Appropriate buffer zones should be established between treatment zones and aquatic systems and treatment areas and significant wildlife habitat.

RATE OF APPLICATION:

CROP	Rate per Ha	HECTARES TREATED BY 20 LITRES
WHEAT, BARLEY, RYE (not underseeded to legumes)	VERY SUSCEPTIBLE WEEDS 325-500 mL	40-60
	SUSCEPTIBLE WEEDS 500-775 mL	26-40
	MORE RESISTANT WEEDS 900 mL – 1.25 L	16-22
	HARD-TO-CONTROL WEEDS 900 mL – 1.5 L	13-22

DIRECTIONS

Aircraft or ground application. Apply sufficient water to obtain good coverage. Use 50-100 litres per hectare for ground application. Treat spring seeded cereals when crop is in 3-4 leaf stage for maximum crop tolerance and weed susceptibility. Fall seeded rye or wheat should be treated as soon as weeds appeared in the spring. Treatment is not recommended in the fall, nor in the spring before the tiller stage. Do not treat after the crop has reached the flag-leaf stage. Use the lower rates within the given ranges when weeds are young and actively growing under good moisture conditions.

Use the higher rates for heavy infestations, when weeds are in advanced stages or if weed growth is slow.

For better top growth control of Canada Thistle, spray twice eight days apart. Use 2 of single dosage for first application followed by 2/3 of single dosage for second application. Wild buckwheat control is improved by applying two sprays of 500 mL per hectare applied one week apart. Rates above 775 mL per hectare may cause some crop injury. However, this injury is usually offset by the benefits of the weed control Do NOT treat crops underseeded to legumes. Do NOT apply to cereals from flag-leaf stage to fully headed stage. For applications in Western Canada, consult provincial recommendations.

Pre-Harvest Intervals

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

RATE OF APPLICATION:

NON-CROPLAND	Rate per Ha	HECTARES TREATED BY 20 LITRES
SUMMERFALLOW, DITCHBANKS, FENCEROWS, ROADSIDES, VACANT LOTS	80 mL – 3.5 L	6-25

DIRECTIONS

Vary rates according to type of, and extent of, weed growth. In general, use the lower rates on very susceptible weeds when growth is rapid. Apply sufficient water for good coverage. Use 100-200 litres per hectare for ground application and 30 litres per hectare for aerial application (summerfallow only).

Treatment should be made early in the summer for best results prior to early bud stage. Repeat application may be necessary for certain deep rooted perennial weeds (i.e. Canada Thistle, Field Bindweed, Leafy Spurge, Toadflax). In summerfallow, do not cultivate until at least 2 weeks after treatment. Often plants poisonous to livestock are grazed more readily after 2,4-D application. Therefore, additional precautions may be necessary if poisonous plants are present. Legumes will be damaged or killed.

For application in western Canada, consult provincial recommendations. Do not use on creeping grasses such as Bent, nor on freshly seeded lawns or pastures until grass is well established.

Pre-Harvest Intervals

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

RATE OF APPLICATION:

CROP	Rate per Ha	HECTARES TREATED BY 20 LITRES
PASTURES (woody growth)	1.5 L – 3.25 L	6-13
ESTABLISHED PASTURES (without legumes) AND RANGELANDS	800 mL-3.5 L	6-25

DIRECTIONS**PASTURES (woody growth):**

TO CONTROL PASTURE SAGE, POPLARS, WESTERN SNOWBERRY AND WILLOWS. Apply in spring or early summer when leaves are fully expanded and plants are actively growing before plants are in the early bud stage. Spray to wet plants

thoroughly.

ESTABLISHED PASTURES: (without legumes) and RANGELANDS:

Vary rates according to type of, and extent of, weed growth. In general, use the lower rates on very susceptible weeds when growth is rapid. Treatment should be made early in the summer for best results prior to early bud stage. Repeat application may be necessary for certain deep rooted perennial weeds (i.e. Canada Thistle, Field Bindweed, Leafy Spurge, Toadflax).

Apply sufficient water for good coverage. Use 100-200 litres per hectare for ground application and 30 litres per hectare for aerial application. Any legumes will be killed or damaged. There is a possibility that plants poisonous to livestock may be grazed more readily after 2,4-D treatment. Suitable precautions should be taken when such plants are present. For applications in western Canada, consult provincial recommendations. Do not use on creeping grasses such as Bent, nor on freshly seeded lawns or pastures until grass is well established.

Pre-Harvest Intervals

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

VERY SUSCEPTIBLE WEEDS, easier-to-kill weeds: Lamb's Quarters, Stinkweed, Wild Mustard.

SUSCEPTIBLE WEEDS, easy-to-kill weeds: Bluebur, Common Ragweed, Kochia, Russian Pigweed, Shepherd's Purse, Mustard (Wormseed, Wild Indian, Tumble, Ball, Hare's Ear).

MORE RESISTANT WEEDS, harder-to-kill weeds: Annual Sow Thistle, Canada Thistle*, Chickweed, Field Peppergrass, Lady's Thumb, Perennial Sow Thistle*, Purslane, redroot Pigweed, Russian Thistle, Smartweed, Buckwheat* (tartary and wild).

HARD-TO-CONTROL WEEDS: Hempnettle*, Leafy Spurge*, Russian Knapweed*, Scentless Mayweed*.

* Only top growth control for these weeds can be expected.

RESISTANCE-MANAGEMENT RECOMMENDATIONS:

For resistance management, Estakil LV 700 2,4-D Low Volatile Liquid Herbicide is a Group 4 herbicide. Any weed population may contain or develop plants naturally resistant to Estakil LV 700 2,4-D Low Volatile Liquid Herbicide and other Group 4 herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same field. Other resistance mechanisms that are not linked to site of action, but specific for individual chemicals, such as enhanced metabolism, may also exist. Appropriate resistance-management strategies should be followed.

To delay herbicide resistance:

- Where possible, rotate the use of Estakil LV 700 2,4-D Low Volatile Liquid Herbicide or other Group 4 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 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 Nufarm Agriculture Inc. at 1-800-868-5444 or at www.nufarm.ca.

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