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GROUP

4

HERBICIDE

Nufarm

Estaprop[®] *PLUS*

Liquid Herbicide

AGRICULTURAL

**CONTAINS DICHLORPROP AND 2,4-D
EMULSIFIABLE CONCENTRATE**

GUARANTEE:

Dichlorprop 300 g/L (present as 2-ethyl hexyl ester)
2,4-D 282 g/L (present as 2-ethyl hexyl ester)

**READ LABEL AND ATTACHED
BOOKLET BEFORE USING**

For use in wheat, barley industrial and non-crop land.

REGISTRATION NO. 27968
PEST CONTROL PRODUCTS ACT

Nufarm Agriculture Inc.,
5507 First St. S.E.,
Calgary, AB T2H 1H9

24 Hour Emergency
Response Number
1-800-424-9300



POTENTIAL SKIN SENSITIZER

Estaprop[®] is a registered trademark of Nufarm Agriculture Inc.

PRECAUTIONS:

KEEP OUT OF REACH OF CHILDREN. Harmful or fatal if swallowed. Avoid contact with skin, eyes and clothing. Wash concentrate from skin or eyes IMMEDIATELY. After use, wash hands and other exposed skin. Avoid breathing spray mist.

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. contact 1 866 375-4648 or www.cropro.org.

ENVIRONMENTAL PRECAUTIONS:

Avoid contamination of ponds, streams, rivers and other water sources.

This product contains a petroleum distillate which is moderately to highly toxic to aquatic organisms. Avoid contamination of aquatic systems during application. Do not contaminate these systems through direct application, disposal of waste or cleaning of equipment.

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 5L.

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 or 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 personal protective equipment separate from household laundry.
- After work, remove all clothing and shower using soap and water.

FIRST AID:

If swallowed, DO NOT INDUCE VOMITING. Get medical attention or contact a poison control centre IMMEDIATELY.

In case of skin contact, remove contaminated clothing and wash skin thoroughly with soap and water.

If in eyes, flush with plenty of water for 15 minutes, and get medical attention or contact a poison control centre IMMEDIATELY.

If inhaled, remove to fresh air and get medical attention or contact a poison control centre IMMEDIATELY.

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

TOXICOLOGICAL INFORMATION:

No specific antidote. Employ supportive care. Treatment should be based on judgement of the physician in response to reactions of the patient. Contains petroleum distillates. Do not induce vomiting.

EMERGENCY TELEPHONE NUMBERS:

For spills or transportation accidents, Chemtrec,
1-800-424-9300.

For health or environmental emergencies, Prosar,
1-877-325-1840.

For product and use information, Nufarm Agriculture Inc.,
1-800-868-5444.

STORAGE CONDITIONS:

Store the container tightly closed away from seeds, fertilizer, plants and foodstuffs. May be stored at any temperature. SHAKE WELL BEFORE USING.

DISPOSAL:**For Recyclable Containers:**

Do not reuse this container for any purpose. This is a recyclable container, and is to be disposed of at a container collection site. Contact your local distributor/dealer or municipality for the location of the nearest collection site.

Before taking the container to the collection site:

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Make the empty, rinsed container unsuitable for further use.

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

For Returnable Containers:

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

For Returnable-Refillable Containers:

For disposal, this container may be returned to the point of purchase (distributor/dealer). It must be refilled by the distributor/dealer with the same product. Do not reuse this container for any other purpose.

For information on 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 BUYER:

Seller's guarantee shall be limited to the terms set out on the label and, subject thereto, the buyer assumes the risk to persons or property arising from the use or handling of this product and accepts the product on that condition.

NOTICE TO USER:

This control product is to be used only in accordance with the directions on this label. It is an offence under the PEST CONTROL PRODUCTS ACT to use a control product under unsafe conditions.

DIRECTIONS FOR USE:**RESISTANCE-MANAGEMENT RECOMMENDATIONS:**

For resistance management, ESTAPROP Plus Liquid Herbicide is a Group 4 herbicide. Any weed population may contain or develop plants naturally resistant to ESTAPROP Plus 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 ESTAPROP Plus 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.

GENERAL USE PRECAUTIONS:

ESTAPROP Plus Liquid Herbicide may cause damage to susceptible crop, ornamental, and other plants, even in minute quantities.

- Avoid spray drift to any desirable vegetation. Coarse sprays are less likely to drift.
- Do not spray during periods of high winds.
- Do not graze or cut treated crops for forage until 40 days after application.
- Withdraw meat animals from treated fields at least 3 days before slaughter.

MIXING:

Shake well before using. To ensure even mixing, half fill the sprayer tank with clean water, add the required amount of ESTAPROP Plus Liquid Herbicide and agitate thoroughly. Add the remainder of the water and agitate before spraying. If the spray solution has been left standing, agitate thoroughly before use. Wash sprayer thoroughly after use.

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

EQUIPMENT AND SPRAY VOLUME:

- Apply in 50 to 200 litres of water per hectare by ground equipment unless otherwise indicated. Higher water volumes will reduce the risk of crop injury.
- Apply in a minimum of 30 litres of water per hectare by aerial equipment.
- Use spray nozzles and pressures that deliver a medium to coarse quality spray.
- Avoid generating fine, driftable droplets.

TANK MIXES:

ESTAPROP Plus Liquid Herbicide may be recommended in tank mix with other products.

Consult the label of the tank mix partner product, and follow the most stringent set of precautions, restrictions and directions for use.

AGRICULTURAL FIELD CROP USES:**CROPS, TIMING, RATES AND METHODS OF APPLICATION:**

Crops under stress from adverse environmental conditions such as excess moisture, drought, disease, etc. may suffer a further setback when ESTAPROP Plus Liquid Herbicide is applied; however, the crop injury that may occur is usually offset by the benefits of enhanced weed control.

- Apply in warm weather when the crop and weeds are growing well, and the weeds are at a susceptible stage.
- Avoid application during drought conditions or during exceptionally hot weather.

CROP: Spring Cereals (Wheat, Barley), not underseeded with legumes

APPLICATION TIME: From the 4-leaf expanded to the early flag-leaf (shot blade) stage.

METHOD: Ground or Aerial application.

RECOMMENDED RATE PER HECTARE: 1.75 L.

CROP: Winter Wheat

APPLICATION TIME: In spring, from full tillering to the shot blade stage.
Do not apply during and after the flag-leaf stage.
Do not apply to seedling winter cereals in the fall.

METHOD: Ground or Aerial application.

RECOMMENDED RATE PER HECTARE: 1.75 L.

WEEDS CONTROLLED WITH 1.75 LITRES PER HECTARE:

Annual sow-thistle	Ragweeds
Ball mustard	Redroot pigweed
Bluebur	Round-leaved mallow
Burdock	Russian pigweed
Canada Thistle*	Russian-thistle**
Cocklebur	Shepherd's-purse
Curled dock*	Smartweeds***
Dog mustard	Stinkweed
Flixweed	Stork's-bill
Hare's-ear mustard	Tartary buckwheat
Indian mustard	Tumble mustard
Kochia**	Volunteer rapeseed (Canola)
Lady's-thumb***	Volunteer sunflower
Lamb's-quarters	Wild buckwheat
Night-flowering catchfly****	Wild mustard
Oak-leaved goosefoot	Wormseed mustard
Perennial sow-thistle*	

*Top growth control only

** Spray before plants are 5 cm high

*** Spray before the 4-leaf stage

**** Spring annuals only

Toadflax - suppression only (where suppression is a visual reduction in weed competition, i.e. reduced population and/or vigour). Degree of suppression will vary with the size of the Toadflax and environmental conditions prior and to following treatment. Apply when the majority of the toadflax are no taller than 15 cm. Use of ESTAPROP Plus Liquid Herbicide for suppression of toadflax in wheat or barley is part of a long-term planned approach for toadflax control, which includes spring and fall tillage, fall patch spraying, summerfallow and/or chemical fallow.

INDUSTRIAL AND NON-CROP USES:

GENERAL BROADLEAF WEED CONTROL:

Most perennial weeds are best controlled by spraying the foliage during the month of May or in early fall. Some species may require a second treatment. Spray weed infested areas with an even spray pattern, making sure weeds shielded by high grass are thoroughly wetted. Spray tall weeds to runoff.

Apply 200 to 600 L/ha of spray mixture, the higher volume will assure better coverage, particularly where high grass cover is present. For Poison Ivy control see BRUSH CONTROL.

ESTAPROP Plus Liquid Herbicide mixes with oil or kerosene and emulsifies in water. To reduce potential drift hazard in non-crop locations, a drift control agent may be added. Follow all directions on the drift control agent label for the correct mixing sequence.

If this material is to be used in straight oil mixture, do not let water get into it or the finished mixture. This material forms an emulsion in water - not a solution. This tends to separate on standing. Provide agitation to prevent such separation and ensure a uniform spray mixture.

ROADSIDES, UTILITY LINES, RAILWAY RIGHTS-OF-WAY, NON-CROP LAND:

Apply 4 L/ha ESTAPROP Plus Liquid Herbicide. Some weeds may need a second treatment. If roadsides are cut for hay, the pre-harvest intervals must be observed.

WEEDS CONTROLLED WITH 4.0 LITRES PER HECTARE:

Alfalfa	Goat's-Beard	Teasel
Bull Thistle	Goldenrod	Toadflax
Burdock	Hawkweed	Vetch
Buttercup	Horsetail (partial control)	Wild carrot
Canada Thistle	Milkweed (topkill)	Yellow rocket
Chicory	Mullein	
Cinquefoil	Perennial Sow thistle	
Curled dock	Plantain	
Dandelion	Sweet clover	
Dogbane	Tansy	

Also see list of weeds controlled with 1.75 L/ha

BRUSH CONTROL:

For best results apply on the foliage and stems just prior to or just after brush is in full leaf in the late spring or early summer. Many species may require re-treatment the following year. Thoroughly wet down all foliage and stems to ground level.

Apply 750 to 1500 L of spray mixture per hectare depending on brush density and height.

Use 8.75 L of ESTAPROP Plus Liquid Herbicide per 1000 L of water to control:

Buckbush	Scotch Pine	Wild Cherry
Hawthorn	Sugar Maple	Wild Plum
Poplar	White Cedar	Wild Raspberry

Use 11.7 L of ESTAPROP Plus Liquid Herbicide per 1000 L of water to control:

Alder	Ground juniper	Rose (some regrowth)
Aspen	Hardhack	Silver maple
Basswood	Hazel	Sugar maple
Balsam Fir	Hickory	Sumac
Birch	Honeysuckle	Tamarack
Bur oak	Manitoba maple	White oak
Blueberry	Poison ivy	Wild apple
Elderberry	Raspberry	Willow
Elm	Red Pine	

FOLIAGE METHOD:

This is the standard method for high volume sprays along fencerows, highways, rail-roads. Use it as a first spray on thick brush composed of mixed species. Apply spray to both foliage and stems of all plants from the time foliage is fully developed in spring until plants begin to go dormant. For effective control, all leaves, stems and suckers must be thoroughly wet to ground line. Some regrowth may be expected on resistant species such as ash, oak and maple. Mix thoroughly before spraying. Apply with power equipment. Cover all foliage and stems to the point of run-off. Brush and trees over 3 metres should be cut close to the ground and sprayed when the regrowth is over 0.6 metres tall.

To control mixed deciduous and coniferous species such as aspen, alder, cherry, balsam, poplar, basswood, birch, elm, bur oak, spruce, pine, fir, tamarack, and white cedar, apply a mixture of 8.2 litres ESTAPROP Plus Liquid Herbicide plus 6.25 litres Vanquish Herbicide (480 g/L) per 1000 litres of water when leaves of deciduous species are fully expanded.

BASAL TREATMENT:

Controls hard-to-kill woody plants. The solution can be applied to the basal part of standing brush during any time of the year. This treatment is not effective for Basswood and Ash. Apply thoroughly to cause runoff on all sides of stems from ground line to 1 metre high. Apply with the basal bath method on scattered brush or as a second spray on species resistant to a first foliage spray. Apply with low volume knapsack sprayer or power equipment. Concentration will depend on species present, volume of spray used and season applied.

Rates:

Susceptible and intermediate species: Mix 2.3 L in 100 L of diesel or fuel oil.

Hard-to-kill species: Mix 3.2 L in 100 L of diesel or fuel oil.

MODIFIED BASAL TREATMENT:

Drench the base of plants, then wet remaining stems and leaves to run-off, spraying 4/5 of the plants from bottom up. Treat when brush is in full foliage. This method may be used where susceptible species have been controlled by prior sprays and resistant species, such as maple, oak and ash remain. Drenching the base of the plant and wetting all stems to run-off is essential for complete control.

Rates:

Early season spraying: Add 8 - 12 L of ESTAPROP Plus Liquid Herbicide to 100 L of diesel or fuel oil and mix thoroughly. Add this mixture to 890 L of water.

During dry weather, or the latter part of spray season: Add 12 L ESTAPROP to 150 L of diesel or fuel oil and mix thoroughly. Add this mixture to 840 L of water.

Stir thoroughly before spraying, particularly if material is allowed to stand for more than one hour after mixing.

CUT SURFACE METHOD:

a. Stump Treatment

To prevent regrowth treat stumps immediately after cutting by spraying or painting stumps, exposed roots and cut surface. Thorough drenching is essential.

b. Frill Treatment:

This method is recommended for resistant standing trees of more than 13 to 15 cm in diameter. Make a frill by using an axe to cut overlapping notches in a continuous ring around the trunk near its base. Cut frills with axe (downward) close together around trunk without removing bark. Spray or paint exposed wood until runoff. Pour in as much of this mixture as the frill will hold without wasting chemical. Treat freshly cut frills at anytime of the year.

Rates:

Mix 3.25 L in 100 L of diesel or fuel oil.

AERIAL APPLICATION METHOD:

For control of aspen, poplar and white birch, mix 8.4 L of ESTAPROP Plus Liquid Herbicide plus 5.2 L of Vanquish Herbicide. This tank-mix may be applied aerially in not less than 85 L of water per hectare. Do not spray when wind velocities are above 8 kph.

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.

