



D03R0B/B

GROUP

4

HERBICIDE

**Nufarm**

# 2,4-D Ester 700

**Liquid Herbicide**

**AGRICULTURAL**

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

**GUARANTEE:**

2,4-D 660 g/L  
(present as 2-ethyl hexyl ester)

**READ THE LABEL AND ATTACHED  
BOOKLET BEFORE USING**

For use in wheat, barley, rye, field corn,  
pastures and non-crop land.

REGISTRATION NO. 27820  
PEST CONTROL PRODUCTS ACT

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

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

**DANGER**



**POISON**

**POTENTIAL SKIN SENSITIZER  
WARNING - SKIN IRRITANT**

## **PRECAUTIONS:**

### **KEEP OUT OF REACH OF CHILDREN.**

Fatal or poisonous if swallowed. Potential skin sensitizer. Causes skin irritation. DO NOT get on skin. 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](http://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, coveralls, chemical-resistant gloves, socks and shoes. Rinse gloves before removal.

**Handling the dilute spray solution (during application or repairing or cleaning equipment):** Wear a long-sleeved shirt, long pants, coveralls, 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:**

DO NOT induce vomiting. No specific antidote. Employ supportive care. Treatment should be based on judgement of the physician in response to reactions of the patient.

**EMERGENCY TELEPHONE NUMBERS:**

For spills or transportation accidents, Chemtrex, 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, Nufarm 2,4-D Ester 700 Liquid Herbicide is a Group 4 herbicide. Any weed population may contain or develop plants naturally resistant to Nufarm 2,4-D Ester 700 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 Nufarm 2,4-D Ester 700 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](http://www.nufarm.ca).

**GENERAL USE PRECAUTIONS:**

Nufarm 2,4-D Ester 700 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 permit lactating dairy animals to graze fields within 7 days after application. Do not graze or cut treated crops for forage until 30 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 Nufarm 2,4-D Ester 700 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. For knapsack, spot treatment applications, mix 200 mL of product in 10 L water. Spray to wet all foliage thoroughly.

### **TANK MIXES:**

Nufarm 2,4-D Ester 700 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.

### **CROPS, TIMING, RATES AND METHODS OF APPLICATION:**

Use the dose required to control the weeds present. To minimize the risk of crop injury, do not exceed the recommended rate listed for the crop. Higher rates may be required to control certain weed species. Rates above those recommended for a crop may result in significant crop injury, and should only be used when the risk of crop injury will be 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.

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<b>CROP:</b>	Spring Cereals (Wheat, Barley, Rye), not underseeded with legumes
<b>APPLICATION TIME:</b>	From the 4-leaf expanded to the early flag-leaf (shot blade) stage.
<b>METHOD:</b>	Ground or Aerial application.
<b>RECOMMENDED RATE PER HECTARE:</b>	Up to 1.1 L.

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<b>CROP:</b>	Winter Cereals (Winter Wheat, Fall Rye)
<b>APPLICATION TIME:</b>	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.
<b>METHOD:</b>	Ground or Aerial application.
<b>RECOMMENDED RATE PER HECTARE:</b>	Up to 0.8 L.

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<b>CROP:</b>	Field Corn
<b>APPLICATION TIME:</b>	As an overall spray, before the corn is 15 cm tall (leaf extended) and/or before the 6-leaf stage. Application as an overall spray at later stages will damage the corn. For later applications (corn 15-75 cm, leaf extended), use a shielded spray or a directed spray with drop pipes. Keep spray off corn foliage. Do not apply within 2 weeks of silking and tasselling.

Avoid cultivation for 2 weeks following spraying.

Use at least 100 L/ha water.

Do not add oil or surfactant.

**METHOD:** Ground or Aerial application.

**RECOMMENDED RATE  
PER HECTARE:** Up to 0.8 L.

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**CROP:** Established Grasses Grown for Forage and Seed Production

**APPLICATION TIME:** In spring, up to the shot blade stage of the grass, or in fall, after harvest. Application during flower development or pollination will reduce seed yield. Use at least 100 L/ha water.

**METHOD:** Ground or Aerial application.

**RECOMMENDED RATE  
PER HECTARE:** Up to 0.8 L (crops for seed production)  
Up to 1.6 L (hay or pasture crops)

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**CROP:** Established Pasture and Rangeland (without legumes)

**APPLICATION TIME:** Apply at a time of rapid growth, usually May, June and/or September. Apply after pasture has been grazed or cut and weed growth has resumed. Spray thoroughly using 100 to 300 litres of water per hectare. A second treatment may be required to control perennial weeds. Do not apply in freshly seeded grasses and pastures until well established. Under conditions of good growth and adequate soil moisture, sprays can be applied up to 2 weeks before normal frost time.

**METHOD:** Ground or Aerial application.

**RECOMMENDED RATE  
PER HECTARE:** Up to 4.7 L.

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**CROP:** Stubble Land, Roadsides, Uncropped Land

**APPLICATION TIME:** Apply at a time of rapid growth, usually May, June and/or September.  
Spray thoroughly using 100 to 300 litres of water per hectare.  
A second treatment may be required to control perennial weeds.  
Cultivating grain stubble and spraying after regrowth may aid in control.  
Under conditions of good growth and adequate soil moisture, sprays can be applied up to 2 weeks before normal frost time.

**METHOD:** Ground or Aerial application (stubble land and uncropped land).  
Ground application (roadsides).

**RECOMMENDED RATE  
PER HECTARE:** Up to 2.35 L.

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**CROP:** Lawns, Parks, Golf Courses (roughs and fairways only)

**APPLICATION TIME:** Apply at a time of rapid growth, usually May, June and/or September, before grasses are in the flag-leaf (shot blade) stage.  
Spray thoroughly using 100 to 300 litres of water per hectare.  
Do not use on bentgrass or newly seeded areas.  
Avoid mowing for several days before and after treatment.

Do not apply if rainfall is expected, or irrigating, within 24 hours.  
Applications while plants are under stress, such as during hot, cold or drought conditions, will increase risk of damage to turf and can result in reduced weed control.  
Use caution when spraying near sensitive desirable vegetation.  
Do not allow people (other than the applicator) or pets onto the treatment area during application.  
Do not enter treated areas until spray has thoroughly dried.

**METHOD:** Ground application only.

**MAXIMUM APPLICATION FREQUENCY:** Two (2) per year, not including spot treatments.

**RECOMMENDED RATE PER HECTARE:** Up to 1.9 L at each application.  
Up to 3.8 L per year, total.

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**CONTROL OF WOODY GROWTH IN NON-GRAZED AREAS:**

Apply at time of rapid growth, usually May, June and/or September.  
Apply 3.25 to 6.8 litres of product, by ground in 1000 to 3000 litres of water per hectare. For aerial applications use 55 to 165 litres of spray solution per hectare. For oil water carrier, use 15 litres of oil mixed in 40 litres of water with continuous agitation. Use the lower rate for species that are more susceptible such as chokecherry, western snowberry and willow. Spray brush species up to 3 metres tall after foliage is well developed. Applications soon after leaves are fully open usually give the best results. Apply sufficient spray volume to thoroughly wet all plant parts to the ground line. Brush or trees above 3 metres tall should be cut close to the ground and sprayed when the regrowth is over 0.6 m tall. With good growing conditions and adequate soil moisture, sprays may be applied up to 2 to 3 weeks before normal frost time. To reduce potential drift hazard, a drift control agent may be added. Follow directions on the drift control agent label for the correct mixing sequence.

Ground or aerial application.

## **BASAL BARK AND STUMP TREATMENT:**

Controls hard-to-kill woody brush and young trees. The solution can be applied to the basal part of standing brush and young trees during any time of the year, prior to formation of corky bark. To prevent regrowth treat stumps immediately after cutting by spraying or painting stumps, exposed roots and cut surface. Thorough drenching is essential. Mix 2.5 L in 100 L of fuel oil. Spray to run-off.

## **WEEDS CONTROLLED:**

### **Susceptible Weeds:**

Annual sow-thistle, Bluebur (before the 4-leaf stage), Burdock (before the 4-leaf stage), Cocklebur, Daisy fleabane, False flax, False ragweed, Flixweed, Giant ragweed, Goat's-beard, Kochia, Lamb's-quarters, Mustards (except Dog and Tansy), Narrow-leaved hawk's-beard (in fall, and at the 1- to 2-leaf stage in spring), Plantain, Prickly lettuce, Ragweeds, Redroot pigweed, Russian pigweed, Russian-thistle, Shepherd's-purse, Stinging nettle, Stinkweed, Sweet Clover (seedling), Thyme-leaved spurge, Volunteer canola, Wild radish, Wild (prairie) sunflower

### **Rates to Control Susceptible Weeds:**

Small seedlings (2- to 4-leaf), growing rapidly, good growing conditions: 0.5 to 0.8 L/ha.

Large weeds, dry or cold weather, heavy infestations: 0.8 L/ha.

Resistance increases with age.

### **Harder-To-Control Weeds:**

Curled dock (apply before 4-leaf stage), Dog mustard, Field pepper-grass, Flixweed (if treated before bolting in spring), Groundsel, Hairy galinsoga, Hawkweed, Heal-all, Knotweed (apply before the 4-leaf stage), Narrow-leaved hawk's-beard (if treated before bolting in spring), Oak-leaved goosefoot, Pineappleweed, Prostrate pigweed, Purslane, Sheep sorrel, Tansy mustard, Tumble pigweed, Velvetleaf.

### **Rates for Harder-To-Control Weeds:**

Small seedlings (2- to 4-leaf), growing rapidly, good growing conditions: 0.9 to 1.3 L/ha.

Large weeds, dry or cold weather, heavy infestations: 1.3 L/ha.

Resistance increases with age.

## **Very-Hard-to-Control Weeds – Only Top Growth Control Can Be Expected:**

Biennial wormwood, Blue lettuce, Bull thistle, Burdock, Buttercup, Canada thistle, Chicory, Curled dock, Dandelion, Field bindweed, Field chickweed\*, Field horsetail\*, Gumweed, Hedge bindweed, Hemp-nettle\* (if treated before the 4-leaf stage), Hoary cress, Lady's-thumb\*, Leafy spurge, Mouse-eared chickweed\*, Perennial sow-thistle, Russian knapweed, Scentless mayweed, Smartweed\*, Tartary buckwheat, Teasel, Volunteer sunflower, Wild buckwheat\*, Yellow rocket (controlled with applications before 4-leaf stage).

\* Use highest listed rate for suppression.

## **Rates for Top Growth Control of Very-Hard-To-Control Weeds:**

Small seedlings (2- to 4-leaf), growing rapidly, good growing conditions: 1.1 to 1.3 L/ha.

Large weeds, dry or cold weather, heavy infestations: 1.3 L/ha.  
Resistance increases with age.

### **NOTICE TO USER:**

This 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.

### **RESTRICTED USE:**

#### **FOREST AND WOODLAND MANAGEMENT**

#### **NATURE OF RESTRICTION:**

This product is to be used only in the manner authorized. Consult local pesticide regulatory authorities about use permits that may be required.

#### **CONIFER RELEASE - AERIAL APPLICATION:**

To control undesirable hardwood species in stands of fir, hemlock, spruce and pine regeneration apply Nufarm 2,4-D Ester 700 at 3.63 to 4.7 L/ha in 30 to 80 L/ha of total spray mixture. Use water or an "oil-water"\* mixture. Never allow any water or mixture containing water to get into the Nufarm 2,4-D Ester 700 or the oil spray premix. Note: Nufarm 2,4-D Ester 700 in water or oil-water sprays forms an emulsion, not a solution, and separation may take place unless sprays are agitated continuously until used up. Mechanical agitation is recommended.

To prevent conifer damage, delay spraying until all new conifer growth has hardened off, when the terminal buds feel sharp to touch.

Caution should be taken to ensure that the conifer is not in a second phase of active or "lammas" growth in late summer. Hardwoods should not have commenced fall colouration. Control of heavy suckering species such as maple, trembling aspen and balsam poplar may only be partial. Raspberries will not be controlled and may if present proliferate following removal of the hardwood overstory.

### **FOREST SITE PREPARATION - AERIAL APPLICATION:**

To control mixed hardwood species on sites to be planted to conifers, use 4.7 to 7.26 litres of Nufarm 2,4-D Ester 700 in 30 to 100 litres of total spray mixture per hectare. Apply as a uniform spray when the foliage is well developed and the brush is actively growing. Under conditions of good growth and high soil moisture, sprays can be used 2 to 3 weeks before normal frost time. For best results use a 10% oil-water\* mixture. NOTE: When preparing sites for planting do not plant conifers before spraying as the conifers present at the time of spraying may be injured or killed.

To reduce potential drift hazard on non-crop locations, a drift control agent may be added. Follow all directions on the drift control agent label for the correct mixing sequence.

\* To prepare the "oil-water" mixture add the Nufarm 2,4-D Ester 700 to the oil in a separate container. With vigorous agitation 1 litre of Nufarm 2,4-D Ester 700 will emulsify up to 10 litres of oil in 100 litres of spray mixture. Start running the water into the empty spray tank, then slowly add the premix with continuous agitation. All the premix should be in the tank by the time 1/3 of the water is in. If the premix is put in the tank without any water, the first water added may form a thick "invert" (water in oil) emulsion which will be hard to break.

### **USE PRECAUTIONS:**

With aircraft, uniform coverage can be obtained and drift minimized by using 235 kPa spray pressure or less at the nozzle, by using nozzles directed straight back, by using a spray boom no larger than 3/4 the wing span of the aircraft and by spraying when wind velocity is less than 8 km/h.

## **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.

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