

# MCPA Ester 600

**Liquid Herbicide**

**AGRICULTURAL**

GROUP

4

HERBICIDE



Nufarm Agriculture Inc.  
5507 1st Street SE  
Calgary, Alberta T2H 1H9  
1-800-868-5444

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

**CONTAINS MCPA  
EMULSIFIABLE CONCENTRATE**

**GUARANTEE:**

MCPA,  
present as 2-ethylhexyl ester . . . 600 g a.e./L

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

For use in wheat, barley, rye, oats, flax (do  
not use on low linolenic acid varieties),  
pastures, roadside and non-cropland areas.

REGISTRATION NUMBER 27803  
PEST CONTROL PRODUCTS ACT



**Nufarm**

## **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.

**Do not use in residential areas**, which are defined as sites where bystanders may be present during or after spraying, including homes, schools, parks, playgrounds, playing fields and public buildings.

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](http://www.croplife.ca).

## **PROTECTIVE CLOTHING AND EQUIPMENT:**

**Handling the concentrate (mixing and loading):** Wear a long-sleeved shirt, long pants, socks, shoes and chemical-resistant gloves. Rinse gloves before removal.

**Handling the dilute spray solution (during application or repairing or cleaning equipment):** Wear a long-sleeved shirt, long pants, socks, shoes and chemical-resistant gloves. Rinse gloves before removal. Applicators using a closed cab are not required to wear chemical resistant gloves.

## **ENVIRONMENTAL HAZARDS:**

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

**Surface runoff:** To reduce runoff from treated areas into aquatic habitats, consider the characteristics and conditions of the site before the treatment. Site characteristics and conditions may lead to runoff include, but are not limited to, heavy rainfall, moderate to steep slope, bare soil, poorly draining soil (e.g. soils that are compacted, fine-textured, or low in organic matter such as clay). Avoid applying this product when heavy rain is forecast. Contamination of aquatic areas as a result of runoff may be reduced by including a strip of untreated vegetation (buffer zone) between the treated area and the edge of the water body.

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

## **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 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.

**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.

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

#### **TOXICOLOGICAL INFORMATION:**

DO NOT induce vomiting. This product contains petroleum distillates. Vomiting may cause aspiration pneumonia. No specific antidote. Employ supportive care. Treatment should be based on judgement of the physician in response to reactions of the patient. High concentrations of MCPA may cause severe irritation to the eyes. Symptoms of overexposure to MCPA could include slurred speech, twitching, jerking and spasms, drooling, low-blood pressure and unconsciousness. Treat symptomatically.

#### **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 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.

**DIRECTIONS FOR USE:**

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

**RESISTANCE-MANAGEMENT RECOMMENDATIONS:**

For resistance management, Nufarm MCPA Ester 600 Liquid Herbicide is a Group 4 herbicide. Any weed population may contain or develop plants naturally resistant to Nufarm MCPA Ester 600 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 MCPA Ester 600 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 MCPA Ester 600 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.
- Withdraw meat animals from treated fields at least 3 days before slaughter.
- Do not harvest forage or cut hay within 7 days after application.

## MIXING

Shake well before using. To ensure even mixing, half fill the sprayer tank with clean water, add the required amount of Nufarm MCPA Ester 600 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.

## EQUIPMENT AND SPRAY VOLUME

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

**Aerial application:** DO NOT apply during periods of dead calm. Avoid application of this product when winds are gusty. DO NOT apply when wind speed is greater than 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) coarse classification. To reduce drift caused by turbulent wingtip vortices, the nozzle distributions along the spray boom length MUST NOT exceed 65% of the wingspan or rotorspan.

### Buffer Zones:

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

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

When a tank mixture is used, consult the labels of the tank-mix partners and observe the largest (most restrictive) buffer zone of the products involved in the tank mixture.

Method of Application	Crop	Buffer Zones (metres) Required for the Protection of:					
		Freshwater Habitat of Depths:		Estuarine/Marine Habitats of Depths:		Terrestrial Habitat	
		Less than 1 m	Greater than 1 m	Less than 1 m	Greater than 1 m		
Field Sprayer*	Cereals, flax, grasses, legumes, stubble, roadsides, uncropped land and woody growth	1	1	1	1	4	
Aerial	Terrestrial Food and Feed Crops						
	Cereals, flax	Fixed	1	0	1	0	60
		Rotary wing	1	0	1	0	50
	Pastures, stubble	Fixed	5	1	1	1	100
		Rotary wing	4	1	1	1	80
	Non-crop Uses						
	Roadsides, uncropped land, woody growth	Fixed	30	1	20	1	200
		Rotary wing	20	1	10	1	100

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

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 165 mL of product in 10 L water. Spray to wet all foliage thoroughly.

### Generic Aerial Application Label Instructions

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.

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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. No human flaggers are permitted.

### **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.

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. Mixer/loader and applicator must be different individuals. Aircraft must be closed cab. 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 long-sleeved shirt, long pants and coveralls, chemical resistant gloves 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 at 1-800-868-5444 or obtain technical advice from the distributor or your provincial agricultural representative.

### **TANK MIXES:**

Nufarm MCPA Ester 600 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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**CROP:** Spring Cereals (Wheat, Barley, Rye, Oats), not underseeded with legumes

**APPLICATION TIME:** From the 3-leaf expanded to the early flag-leaf stage (wheat, barley, rye).  
From the 1-leaf expanded to the early flag-leaf stage (oats).  
From milk stage to maturity (wheat, barley, rye).  
Do not apply more than one treatment per year.

**METHOD:** Ground or Aerial application.

**RECOMMENDED RATE**

**PER HECTARE:** Up to 1.05 L for wheat, barley and rye.  
Up to 900 mL for oats.

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**CROP:** Winter Cereals (Winter Wheat, Fall Rye)

**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.  
Do not apply more than one treatment per year.

**METHOD:** Ground application only.

**RECOMMENDED RATE**

**PER HECTARE:** Up to 1.05 L.

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**CROP:** Flax (Do not use on low linolenic acid varieties)

**APPLICATION TIME:** When flax is between 5 cm in height to before bud stage.  
To minimize crop injury, spray at early growth stages, in the evening, and use higher water volumes.  
Do not apply more than one treatment per year.

**METHOD:** Ground or Aerial application.

**RECOMMENDED RATE****PER HECTARE:** Up to 700 mL.**Caution:** Early crop injury may be observed, but yield should not be affected.

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**CROP:** Established Grasses and Legumes (Alsike and Red Clover and Alfalfa)**APPLICATION TIME:** For control of susceptible winter annual and perennial weeds, spray in the very early spring, before growth of these crops has commenced.  
In pure stands of grasses, applications may be made in the fall.  
Do not apply more than two treatments per year, with a minimum retreatment interval of 90 days.**METHOD:** Ground application only.**RECOMMENDED RATE****PER HECTARE:** Up to 1.65 L.

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**CROP:** Pasture (without legumes) and 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.  
Use the higher rate for perennial weeds; a second treatment may be required. Cultivating grain stubble and spraying after regrowth may aid in control.  
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.  
For stubble land and pastures a maximum of 2 applications is permitted per season followed by a minimum retreatment interval of 21 days for stubble land and 90 days for pastures.**METHOD:** Ground or Aerial application (Aerial application for use ONLY in pastures without legumes, stubble land, roadsides and uncropped land)  
For spot treatment of roadside and uncropped land using high-pressure handwands, do not exceed 900 litres of "ready to use" solution (equivalent to 15 L of product.) per day per individual applicator.  
For application using handheld equipment, use a maximum concentration of 165 mL of Nufarm MCPA Ester 600 Liquid Herbicide in 10 L of spray solution.

For broadcast treatment of roadside and uncropped land, a maximum of 2 applications are permitted per season, with a minimum retreatment interval of 21 days.

### **RECOMMENDED RATE**

**PER HECTARE:** Up to 2.8 L.

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

Apply at time of rapid growth, usually May, June and/or September. For broadcast treatment apply 1.8 to 2.8 litres of product in 100 to 1000 litres of water per hectare. For spot treatment do not exceed 5.6 L/ha. 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. For broadcast treatment of woody growth, a maximum of 2 applications are permitted per season, with a minimum retreatment interval of 21 days.

### **WEEDS CONTROLLED:**

**(DO NOT exceed the rates given for each specific crop identified in the CROPS, TIMING, RATES AND METHODS OF APPLICATION section)**

### **SUSCEPTIBLE WEEDS:**

Burdock (before the 4-leaf stage), Cocklebur, Plantain, Flixweed\*, Lamb's-quarters, Mustards (except Dog and Tansy), Prickly lettuce, Ragweeds, Russian pigweed\*, Shepherd's-purse\*, Stinkweed, Vetch, Wild radish, Wild (annual) sunflower.

\* Use the higher rate in the rate range.

### **RATES TO CONTROL SUSCEPTIBLE WEEDS:**

Small seedlings, good growing conditions: 580 mL/ha.

Large weeds, dry or cold weather, heavy infestations: 900 mL/ha.

Resistance increases with age.

### **HARDER-TO-CONTROL WEEDS:**

Annual sow-thistle, Biennial wormwood, Blue lettuce\*, Bluebur, Canada thistle\*, Corn spurry\*, Curled dock, Dandelion, Dog mustard, Field bindweed\*, Field Horsetail\*, Field pepper-grass, Goat's-beard, Gumweed, Hairy galinsoga, Hedge bindweed\*, Hemp-nettle (before the 4-leaf stage), Hoary cress\*, Kochia, Lady's thumb\*, Leafy spurge\*, Oak-leaved goosefoot, Perennial sow-thistle\*, Purslane, Redroot pigweed, Russian knapweed\*, Russian-thistle, Smartweed\*, Sweet clover (seedling), Tansy mustard, Tartary buckwheat.

\* Top growth control.

**RATES FOR HARDER-TO-CONTROL WEEDS:**

Small seedlings, good growing conditions: 1.05 L/ha.

Large weeds, dry or cold weather, heavy infestations: 1.50 L/ha.

Resistance increases with age.

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A-August 31, 2009