

GROUP	4	9	HERBICIDE
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MON 77790 Herbicide

Water soluble herbicide for non-selective weed control

AGRICULTURAL

DANGER CORROSIVE TO EYES



CAUTION

POISON

ACTIVE INGREDIENT: Glyphosate - 132 grams acid equivalent per litre present as the isopropylamine salt
2,4-D - 82 grams acid equivalent per litre present as the isopropylamine salt

REGISTRATION NUMBER 25898 PEST CONTROL PRODUCTS ACT

READ THE LABEL AND ATTACHED BROCHURE BEFORE USING.

AVOID CONTACT WITH FOLIAGE OF CROP OR OTHER DESIRABLE VEGETATION SINCE SEVERE INJURY OR DESTRUCTION MAY RESULT.

NOT FOR RELABELLING OR REPACKAGING.

BAYER CROPSCIENCE INC
Suite 200, 160 Quarry Park Blvd SE
Calgary, Alberta T2C 3G3
1-888-283-6847
www.cropscience.bayer.ca

Read NOTICE before buying or using. If NOTICE terms are not acceptable, return at once unopened.

NET CONTENTS: 10 LITRES

2020-1550
2020-08-04

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PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN.
CORROSIVE. CAUSES IRREVERSIBLE EYE DAMAGE.
HARMFUL IF SWALLOWED.
MAY CAUSE ALLERGIC SKIN REACTION.

Do not get in eyes, on skin or on clothing.

For all activities (including application, mixing, loading, clean-up and repair): wear a face shield or safety glasses, coveralls over a long-sleeved shirt, long pants, chemical-resistant gloves and chemical-resistant footwear.

The restricted entry interval is 12 hours after application for all agricultural uses.

FIRST AID

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.

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.

In case of an emergency involving this product, call Bayer CropScience collect, day or night:

Accident/Spills/Medical Emergency..... 1-800-334-7577

TOXICOLOGICAL INFORMATION

2,4-D may cause severe irritation to the eyes.

Overexposure to 2,4-D may cause coughing, burning, dizziness or temporary loss of muscle coordination. Other possible effects of overexposure include fatigue, muscle weakness or nausea. Treat symptomatically

ENVIRONMENTAL HAZARDS

- **TOXIC** to aquatic organisms and non-target terrestrial plants. Observe buffer zones specified under **DIRECTIONS FOR USE**.
- 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 strip 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. sandy soil) and/or the depth to the water table is shallow.

RUNOFF

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

Avoid application of 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 between the treated area and the edge of the water body.

To prevent runoff from domestic uses avoid spraying on driveways, sidewalks or other hard surfaces. Do not irrigate within 24 hours after application.

PHYSICAL OR CHEMICAL HAZARDS

Spray solutions of this product should be mixed, stored and applied only in stainless steel, aluminum, fiberglass, plastic and plastic-lined steel containers.

DO NOT MIX, STORE OR APPLY THIS PRODUCT OR SPRAY SOLUTIONS OF THIS PRODUCT IN GALVANIZED STEEL OR UNLINED STEEL (EXCEPT STAINLESS STEEL) CONTAINERS OR SPRAY TANKS. This product or spray solutions of this product react with such containers and tanks to produce hydrogen gas which may form a highly combustible gas mixture. This gas mixture could flash or explode, causing serious personal injury, if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source.

STORAGE

Store product in original container only, away from other pesticides, fertilizer, food or feed. Not for use or storage in or around the home. Store above 5° C to keep product in solution. If crystals form, place in a warm room (20°C), allow the product to reach room temperature and roll or shake periodically until crystals have re-dissolved. Keep container closed to prevent spills and contamination.

DISPOSAL

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.
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NOTICE

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GENERAL INFORMATION

MON 77790 Herbicide is a post-emergent herbicide for control or suppression of emerged weeds prior to seeding. This product enters the plant through the foliage and moves throughout the plant. Visual effects of control are gradual wilting or yellowing of the plant, which advances to complete browning of above ground growth and deterioration of affected underground plant parts.

RESISTANCE-MANAGEMENT RECOMMENDATIONS

For resistance management, MON 77790 is a Group 4 and 10 herbicide. Any weed population may contain or develop plants naturally resistant to MON 77790 Herbicide and other Group 4 and 10 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 MON 77790 Herbicide or other Group 9 and 10 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 pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.
- For further information or to report suspected resistance, contact Bayer CropScience at 1-888-283-6847 or at www.cropscience.bayer.ca.

APPLICATION PRECAUTIONS

Liquid formulation – Groundboom Equipment

Applicators must wear coveralls over a long-sleeved shirt and long pants. Chemical-resistant gloves must also be worn during clean-up and repair activities.

When handling more than 170 kg a.e. per day workers must also use a closed cab.

Closed mixing/loading systems are required.

Extremely cool or cloudy weather following treatment or prolonged drought conditions may slow activity of this product and delay the visual effects of control. Reduced control may result if treatments are made during poor growing conditions such as drought stress, disease or insect damage, or if weeds have been mowed, grazed or cut. Heavy dust on foliage or an overstory canopy covering targeted weeds may also reduce control. Heavy rainfall immediately after application may wash the chemical off the foliage and a repeat treatment may be required. Do not apply if rainfall is forecast for the time of application. For best results spray coverage should be uniform and complete.

DO NOT APPLY THIS PRODUCT USING AERIAL SPRAY EQUIPMENT. AVOID DRIFT. EXTREME CARE MUST BE USED WHEN APPLYING THIS PRODUCT TO PREVENT INJURING DESIRABLE PLANTS AND CROPS. Do not allow spray mist to drift since even minute quantities of spray can cause severe damage or destruction to nearby crops, plants or other areas on which treatment is not intended, or may cause other unintended consequences. Do not apply during wind conditions, as spray drift may occur. When spraying, avoid combinations of pressure and nozzle type that will result in fine particles (mist), which are more likely to drift.

NOTE: Use of this product in any manner not consistent with this booklet may result in injury to persons, animals or crops, or other unintended consequences. Keep container closed to prevent spills and contamination.

MIXING INSTRUCTIONS

Fill the spray tank to about $\frac{3}{4}$ of the desired volume with clean water. Add the recommended amount of MON 77790 herbicide, then add the remaining portion of water while maintaining agitation. Removing hose from tank immediately will avoid back siphoning into water source.

During mixing and application, foaming of the spray solution may occur. To prevent or minimize foaming, terminate by-pass and return lines at the tank bottom during mixing.

NOTE: Reduced results may occur if water containing soil is used, such as water from ponds and unlined ditches.

ANNUAL WEED CONTROL PRIOR TO SEEDING

CEREAL CROPS (WHEAT, BARLEY AND RYE)

MON 77790 Herbicide may be applied to emerged annual weeds (see Weeds Controlled table) prior to the seeding of cereal crops such as wheat, barley and rye.

NOTE: Broad-leaved crops such as lentils, canola and flax may be injured by a pre-seeding application with this product and so should not be planted to fields receiving this type of treatment.

Planting should follow soon after application since this product does not provide residual weed control. Applications too far in advance of seeding will allow weeds to emerge between application and crop emergence. Applications made under warm, dry conditions may prevent rapid dissipation of the 2,4-D component of this product, and crop injury may result.

CONTROL OF WEEDS UNDER STRESS CONDITIONS

Under certain stress conditions, such as drought, cool temperatures or where extremely hard water (> 700 ppm Ca + Mg) has been used, weed control may be reduced with this product. However, the following list of application instructions will help improve results under these conditions.

Use 50 Litres per hectare water volume

AND

Use the higher rate of MON 77790 herbicide within the recommended rate range

DIRECTIONS FOR USE

Glyphosate is not to be applied using hand-wicking or hand-daubing methods.

Use conventional ground boom equipment (field sprayers) for control of weeds listed in this booklet.

Recommended applications of this product can be made to land prior to seeding. This product should be applied to emerged, actively growing weeds. Application at earlier growth stages generally will provide best results.

Refer to the “General Information”, “Mixing Instructions” and “Application Precautions” sections of this label prior to use.

Apply MON 77790 at 3.4 to 5.1 litres per hectare in 50 to 100 litres of clean water per hectare. The use of lower water volume may improve results, particularly when extremely hard water is used, (i.e., >700 ppm Ca + Mg). DO NOT apply more than once per year.

Higher rates of this product should be applied when weeds are under poor growing conditions such as drought or for those weeds specified in the table below.

When applied as recommended, this product will control weeds as outlined in the following “Weeds Controlled” Table.

All liquid products, all crops—12-hour restricted-entry interval (REI)

DO NOT apply this product directly to freshwater habitats such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands, estuaries or marine habitats.

DO NOT contaminate irrigation/drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.

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.

Apply only when the potential for drift to areas of human habitation or 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.

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) coarse classification. Boom height must be 60 cm or less above the crop or ground.

Airblast or mist blower application: **DO NOT** apply during periods of dead calm. Avoid application of this product when winds are gusty. **DO NOT** direct spray above plants to be treated. **DO NOT** apply when wind speed is greater than 16 km/h at the application site as measured outside of the treatment area on the upwind side. For airblast applications, turn off outward pointing nozzles at row ends and outer rows.

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 S572.1) coarse classification. To reduce drift caused by turbulent wingtip vortices, the nozzle distribution along the spray boom length **MUST NOT** exceed 65% of the wing- or rotorspan.

Buffer Zones:

Use of the following spray methods or equipment **DO NOT** require a 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, soil drench and soil incorporation.

For application to rights-of-way and for forestry uses, buffer zones for protection of sensitive terrestrial habitats are not required; however, the best available application strategies which minimize off-site drift, including meteorological conditions (for example, wind direction, low wind speed) and spray equipment (for example, coarse droplet sizes, minimizing height above canopy), should be used. Applicators must, however, observe the specified buffer zones for protection of sensitive aquatic habitats.

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, riparian areas and shrublands) and sensitive aquatic habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs, wetlands and estuarine/marine water bodies).

Agricultural and non-cropland systems	Maximum number of applications	Buffer Zones (metres) Required for the Protection of:	
		Aquatic habitats	Terrestrial habitats
Agricultural crop system and ground boom application method			
Pre-seeding applications for rye and all other crops.	1	1	1
Wheat, barley	3	1	2

For tank mixes, consult the labels of the tank-mix partners and observe the largest (most restrictive) 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 buffer zones for this product can be modified based on weather conditions and spray equipment configuration by accessing the Buffer Zone Calculator on the Pest Management Regulatory Agency web site.

WEED CONTROL

The following table provides rates and specific application instructions for control of the annual weeds listed.

WEED CONTROL WITH MON 77790 HERBICIDE

RATE	WEEDS CONTROLLED		COMMENTS
	Grasses	Broadleaves	
3.4 - 5.1 L/ha	Downy brome foxtail barley (suppression only)	Canada fleabane ³ common ragweed ³ flixweed	¹ - including types resistant to Group 1,2 and 3 herbicides

Weeds up to 15 cm in height.	giant foxtail green foxtail ¹ Persian darnel volunteer cereals wild oats ²	hemp nettle kochia lady's thumb lamb's quarters narrow-leaved hawk's beard ⁴ redroot pigweed russian thistle shepherd's purse stinkweed volunteer canola (rapeseed) ⁵ volunteer flax wild buckwheat ³ wild mustard	² - including types resistant to Group 1,2,3 and 8 herbicides ³ - for 3-4 leaf stage and for weeds 8 cm to 15 cm in height use 5.1 L/ha rate ⁴ - use higher rate if bolting begins ⁵ - including all herbicide tolerant canola varieties
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SPRAYER CLEANUP

CLEAN THE ENTIRE SPRAYER AFTER APPLICATION OF THIS PRODUCT.

Failure to clean the sprayer thoroughly may result in injury to desirable crops, which are subsequently sprayed. First, add clean water to the tank and thoroughly rinse the entire sprayer system. Secondly, fill the tank with water and ammonia. Add 1 litre of household ammonia per 100 litres of water. Pump enough solution through the hoses, boom and nozzles to fill these parts completely. Then fill the tank, close and leave for 24 hours before draining and rinsing thoroughly with water.

Application or use of other agricultural chemicals with the equipment used for this product may result in injury to desirable vegetation.