

2022-11-23
2022-5716

GROUP	9	15	27	HERBICIDES
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MARVEL Herbicide

COMMERCIAL (AGRICULTURAL)
SUSPENSION

A Herbicide Solution for Postemergence use in Glyphosate Tolerant Field Corn for Control of Annual and Perennial Grass and Broadleaf Weeds

FOR SALE FOR USE IN EASTERN CANADA AND THE RED RIVER VALLEY OF MANITOBA ONLY

ACTIVE INGREDIENT:

Glyphosate (present as the potassium salt)	250 g/L
S-metolachlor (and R-enantiomer)	250 g/L
Mesotrione	25 g/L

Contains 1,2-benzisothiazolin-3-one at 0.0193% as a preservative.

READ THE LABEL AND ATTACHED BOOKLET BEFORE USING

KEEP OUT OF REACH OF CHILDREN



CAUTION **POISON**
POTENTIAL SKIN SENSITIZER

REGISTRATION NO.: 34660 PEST CONTROL PRODUCTS ACT

NET CONTENTS: **1 L - Bulk**

Sharda Cropchem Limited
2nd Floor, Prime Business Park
Dashrathlal Joshi Road
Vile Parle (West)
Mumbai - 400056, India

Canadian Agent:
Sharda Cropchem Limited
63 Kingsview Blvd
Etobicoke, Ontario, CA
M9R1V1
1-844-810-5720
1-416-840-5639

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.

FIRST AID

IN CASE OF POISONING, contact a physician or a poison control centre **IMMEDIATELY**. Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

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.

TOXICOLOGICAL INFORMATION

Treat symptomatically if ingested or in contact with eyes or skin. If gastric lavage is considered necessary, prevent aspiration of gastric material. Administration of activated charcoal may also be considered.

PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN.

Potential skin sensitizer. Harmful if inhaled. Avoid breathing spray mist.

Wear a long-sleeved shirt, long pants, chemical-resistant gloves, shoes and socks when mixing, loading, applying, clean-up and repair activities. Wash the outside of the gloves before removing. Gloves are not required during application within a closed cab. In addition, wear, goggles or a face shield during mixing and loading. Wash splashes from skin and eyes **IMMEDIATELY** with plenty of water. Avoid working in spray mist. If ventilation is not adequate, wear an appropriate pesticide respirator. Avoid all drift or contact with other vegetation. After spraying, wash hands and shower thoroughly with soap and water. While using product, do not eat, drink or smoke. Wash hands and exposed skin with soap and water thoroughly before eating, drinking, smoking, applying cosmetics or using the toilet. Keep product away from food, drink and animal feed. Store product in original container, tightly closed and in a safe place.

DO NOT enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours. If required, certified applicators may enter treated areas within 12 hours for short-term tasks not involving hand labour if at least 4 hours has passed since application and long-sleeved shirt, long pants, socks and shoes, goggles or face shield, chemical-resistant gloves, and a respirator with a NIOSH-approved organic-vapour-removing cartridge with a prefilter approved for pesticides OR a NIOSH-approved canister approved for pesticides is worn. Time spent in the treated area cannot exceed 1 hour in a 12-hour period.

DO NOT use or store product near heat or open flame. **DO NOT** apply beyond the field boundary.

DO NOT apply more than 4.2 L product/ha per season.

When tank-mixes are permitted, read and observe all label directions, including rates and restrictions for each product used in the tank-mix. Follow the more stringent label precautionary measures for mixing, loading and applying stated on both product labels.

DO NOT APPLY BY AIR.

ENVIRONMENTAL PRECAUTIONS

TOXIC to aquatic organisms and non-target terrestrial plants. Observe spray 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 filter strip between the treated area and the edge of the water body.

PHYSICAL AND CHEMICAL HAZARDS

Spray solutions of MARVEL Herbicide should be mixed, stored and applied only in stainless steel, fibreglass, plastic and plastic-lined steel containers.

DO NOT MIX, STORE OR APPLY MARVEL HERBICIDE OR SPRAY SOLUTIONS OF MARVEL HERBICIDE IN GALVANIZED STEEL OR UNLINED STEEL (EXCEPT STAINLESS STEEL) CONTAINERS OR SPRAY TANKS. MARVEL Herbicide or spray solutions of MARVEL Herbicide 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

Always store product in original container with top closed in a cool, dry place. Store this product away from food or feed. MARVEL Herbicide can be stored in freezing conditions. If frozen, allow to thaw and agitate thoroughly prior to use. Do not use or store near heat or open flame.

DISPOSAL

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.

CONTAINER 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.

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FOR REFILLABLE CONTAINERS:

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FOR 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.

GENERAL INFORMATION

MARVEL Herbicide contains three active ingredients for a one-pass broad-spectrum weed management program in glyphosate tolerant corn. MARVEL Herbicide has both contact and residual activity. Following a post-emergent application of MARVEL Herbicide, emerged weeds take up the herbicide through treated foliage and cease growth soon after application. MARVEL Herbicide is also absorbed through the soil and/or by the foliage of emerging weeds. Complete death of the weeds may take up to 2 weeks. MARVEL Herbicide provides residual control of newly emerging susceptible weeds through root and shoot absorption. MARVEL Herbicide has a high level of crop safety in glyphosate tolerant corn.

USE DIRECTIONS – FIELD CORN:

WARNING: APPLY MARVEL HERBICIDE ON GLYPHOSATE TOLERANT CORN VARIETIES ONLY

NOTE: ALWAYS USE PEDIGREED (I.E. CERTIFIED) GLYPHOSATE TOLERANT CORN SEED. CORN WHICH IS NOT DESIGNATED AS GLYPHOSATE TOLERANT WILL BE DAMAGED OR DESTROYED BY THIS TREATMENT.

Apply MARVEL Herbicide at 4.2 L per hectare in a spray volume of 100 - 200 L and a minimum pressure of 206 kPa (refer to the “*MIXING AND SPRAYING INSTRUCTIONS*” section of this label) for post-emergent weed control from the spike up to and including the 6 leaf stage of glyphosate tolerant corn. A non-ionic surfactant such as AGRAL® 90 at 0.2% v/v may be added.

For best results, apply MARVEL Herbicide to actively growing weeds that are less than 15 cm in height. For protection of the corn crop’s yield potential, apply MARVEL Herbicide before the start of the critical period of weed control.

When glyphosate tolerant corn is grown under no-till conditions, a burndown weed control application may still be required prior to a MARVEL Herbicide application.

MARVEL Herbicide will control:

Broadleaf Weeds		Grasses
Emerg ¹ Weed Control of:		
American nightshade	Mustard (wild)	Barley (volunteer)
Buckwheat (wild)	Pigweed (redroot, smooth)	Barnyard grass
Canola (non-glyphosate tolerant)	Ragweed (common)	Crabgrass (smooth, hairy)
Chickweed	Shepherd’s purse	
Cleavers	Smartweed (green, Pennsylvania)	Fall panicum
Cocklebur	Sowthistle (perennial) ³	Foxtail (green, yellow, giant)
Corn spurry	Stinkweed	Quackgrass
Cow cockle	Stork’s bill	Proso millet (wild)
Eastern black nightshade	Tomato (wild)	Wheat (volunteer)
Flixweed	Thistle (Russian)	Wild oats
Hawk’s beard (narrow-leaved)	Thistle (Canada) ³	Witchgrass
Hempnettle	Velvetleaf	Yellow nutsedge ²
Lamb’s-quarters	Wirestem muhly	
Night flowering catchfly		
Kochia		
Lady’s thumb		
Milkweed (common) ²		

Additional Residual Weed Control of:		
American nightshade	Pigweed (redroot)	Barnyard grass
Eastern black nightshade	Mustard (wild)	Crabgrass (smooth, hairy)
Lady's thumb	Velvetleaf	Fall panicum
Lamb's-quarters		Foxtail (green, yellow, giant)
		Witchgrass

¹Plants not fully emerged at time of application will not be controlled

²Suppression Only

³Perennial sowthistle and Canada thistle should be from the rosette stage to 20 cm in height and actively growing

MARVEL Herbicide Plus AATREX® Liquid 480 Herbicide

MARVEL Herbicide may be tank-mixed with AATREX Liquid 480 Herbicide at a rate of 0.58 L/ha for control of all weeds listed above plus residual control of wild buckwheat. A non-ionic surfactant such as AGRAL 90 at 0.2% v/v may be added.

When tank-mixes are permitted, read and observe all label directions, including rates and restrictions for each product used in the tank-mix. Follow the more stringent label precautionary measures for mixing, loading and applying stated on both product labels.

PRE-HARVEST INTERVALS:

Crops	PHI (days)
Field corn grain/stover	100
Field corn forage	90

USE PRECAUTIONS:

MARVEL Herbicide can only be used postemergent on glyphosate tolerant corn.

Although MARVEL Herbicide has a flexible recropping profile, certain crops may be sensitive to low concentrations in the soil. Therefore, careful consideration should be given to crop rotation plans prior to using MARVEL Herbicide (refer to "*RECROPPING GUIDELINES*").

Do not apply when weather conditions may cause drift to non-target areas. Severe damage or destruction may be caused by contact of MARVEL Herbicide to any vegetation (including leaves, green stems, exposed non-woody roots, or fruit) or crops, trees, and other desirable plants to which treatment is not intended.

When weeds are stressed due to drought, heat, lack of fertility, flooding or prolonged cool temperatures, control can be reduced or delayed since the weeds are not actively growing. Weed escapes or re-growth may occur when application is made under prolonged stress conditions. Optimum weed control will be obtained if an application of MARVEL Herbicide is made following label directions when weeds are actively growing. If an activating rain (12 mm) is not received within 7-10 days after a postemergent application, residual weed control will be reduced.

Thorough coverage of emerged weeds is essential for effective control with MARVEL Herbicide. Although weed competition is quickly halted, visual symptoms of dying weeds (discolouration) may take up to 2 weeks to appear depending on the weed species and growing conditions.

Temporary crop injury (bleaching) may occur under extreme weather conditions or when the crop is under stress due to inadequate or abnormally high moisture levels or extreme temperatures. The symptoms are most visible where excessive rates have been applied, such as sprayer overlaps. Corn quickly outgrows these effects and continues to grow normally.

Do not make a foliar postemergent application of any organophosphate or carbamate insecticide within 7 days before or 7 days after a MARVEL Herbicide application or severe corn injury in yield loss may occur. Do not apply MARVEL Herbicide in a tank mix with any organophosphate or carbamate insecticide or severe corn injury in yield loss may occur.

Severe corn injury resulting in yield loss may occur if MARVEL Herbicide is applied to corn crops that are treated with Lorsban™ or other organophosphate containing soil insecticides.

MARVEL Herbicide may be applied prior to or following a pyrethroid-type insecticide such as FORCE® Insecticide or MATADOR® 120EC Insecticide.

Do not apply to soils that contain less than 1% or more than 10% organic matter.

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.

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

Do not cultivate corn within 7 days before or after a postemergent MARVEL Herbicide application.

Make only one application of MARVEL Herbicide per year. Do not apply MARVEL Herbicide to ground that has been or will be treated with CALLISTO® 480SC Herbicide.

Do not apply MARVEL Herbicide with suspension fertilizers or urea ammonium nitrate (UAN) as the carrier.

SPRAY DRIFT MANAGEMENT FOR GROUND APPLICATIONS

GENERAL INFORMATION:

Apply only to agricultural crops when the potential for drift to areas of human habitations and 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.

DO NOT apply by air.

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.

SPRAY BUFFER ZONES:

Spot treatments using hand-held equipment **do not** require a buffer zone.

The spray 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), sensitive freshwater habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands) and estuarine/marine habitats.

Method of application	Crop	Spray Buffer Zones (metres) Required for the Protection of:				
		Freshwater Habitat of Depths:		Estuarine/Marine Habitat of Depths:		Terrestrial Habitat:
		Less than 1 m	Greater than 1 m	Less than 1 m	Greater than 1 m	
Field sprayer	glyphosate tolerant corn	1	1	1	1	2

When tank mixes are permitted, consult the labels of the tank-mix partners and observe the largest (most restrictive) spray 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 spray buffer zones for this product can be modified based on weather conditions and spray equipment configuration by accessing the Spray Buffer Zone Calculator on the Pesticides portion of the Canada.ca website.

MIXING AND SPRAYING INSTRUCTIONS:

The use of urea ammonium nitrate (UAN) will result in crop injury and reduced grass weed control and is not recommended with MARVEL Herbicide.

GROUND APPLICATION ONLY:

Water Volume:

Apply in 100 – 200 litres per hectare. When weed foliage is dense, use a minimum 140 litres per hectare.

Spray Pressure:

206 – 300 kPa

Spray Nozzles:

Flat Fan with 50 mesh or larger screens. For uniform coverage and increased penetration of the crop canopy, set the nozzles at a downward angle of 90 degrees (90°).

Surfactant:

Postemergent applications of MARVEL Herbicide may be applied with a non-ionic surfactant such as AGRAL 90 at 0.2% v/v (2.0 L for each 1000 L of spray mixture).

Mixing Procedure:

1. Ensure that the sprayer is totally clean.
2. Fill the sprayer half full with water. Engage gentle agitation.
3. Ensure that the agitation system is working properly and that it creates a rippling or rolling action on the water surface.
4. Add the non-ionic surfactant if applicable (e.g., AGRAL 90) at 0.2% v/v.
5. Add MARVEL Herbicide and AATREX Liquid 480 Herbicide (if an applicable tank-mix) slowly and agitate until completely dispersed. To ensure complete dispersion, wait 2 or 3 minutes after the last of the herbicide has been added to the tank.
6. Continue agitation while completing the filling of the sprayer with water.
7. Always ensure that agitation is maintained until spraying is completed, even if stopped for brief periods of time.
8. If agitation is stopped for more than 5 minutes, re-suspend the spray solution by running on full agitation prior to spraying. **MARVEL Herbicide must be sprayed the same day as mixing.**
9. Do not mix, load or clean spray equipment where there is a potential to contaminate wells or aquatic systems.

RESISTANCE-MANAGEMENT RECOMMENDATIONS

For resistance management, MARVEL Herbicide is a Group 9, 15 and 27 herbicide. Any weed population may contain or develop plants naturally resistant to MARVEL Herbicide and other Group 9 and/or 15 and/or 27 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 MARVEL Herbicide or other Group 9, 15 and 27 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 and to report suspected resistance, contact company representatives at Sharda Cropchem Limited at 1-844-810-5720 or 1-416-840-5639.

RECROPPING GUIDELINES:

Certain crops have been shown to be sensitive to low residues of MARVEL Herbicide in the soil. The minimum recropping interval is the time between the last application of MARVEL Herbicide and the anticipated date of planting of the next crop.

To avoid injury to subsequent crops after an application at the recommended rate of MARVEL Herbicide, the following recropping intervals should be observed.

CROP	MINIMAL RECROPPING INTERVAL
Winter wheat	4.5 months
Spring wheat	10 months
Eastern Canada only- Alfalfa, potato, soybeans, transplanted tomato, white beans*	11 months
All other crops	Bioassay

*** DO NOT RECROP TO ALFALFA, POTATO, SOYBEANS, TRANSPLANTED TOMATOES, OR WHITE BEANS IN THE RED RIVER VALLEY OF MANITOBA WITHOUT FIRST PERFORMING A CONFIRMATORY BIOASSAY TO ENSURE CROP SAFETY.**

Observe the recropping guidelines of any product(s) to be tank mixed with MARVEL Herbicide.

In the event of crop failure, only field corn (grain or silage), seed corn, or sweet corn can be planted as a salvage crop in the same fields in which the failed crop was treated with MARVEL Herbicide. An application of MARVEL must NOT be made to the salvage crop.

Land treated with MARVEL HERBICIDE CAN ONLY BE PLANTED TO A CROP NOT LISTED IN THE PREVIOUS TABLE if a field bioassay can be successfully performed. The bioassay must indicate normal growth with no yield reductions.

A bioassay may be conducted in any year following the year of application to assess the tolerance of the tested crop intended for planting in the year following the bioassay. Do not conduct a bioassay in the year of application. When conducting a field bioassay, it is very important to select a representative area(s) of the field previously treated with MARVEL Herbicide to plant the test crop(s).

FIELD BIOASSAY

1. Representative Sample:

Ensure that soil parameters such as soil texture, depth of topsoil layer, soil pH and drainage of the test area selected are representative of the remainder of the field.

2. Sample Size:

The seeded area of each selected bioassay crop must be large enough to ensure that reliable results are obtained. The seedbed preparations and seeding of the bioassay crop(s) should be conducted the same way as when the entire field would be planted.

3. Other Residual Herbicides:

It is important that other herbicide products which are known to have residual activity were not applied to the field between the last application of MARVEL Herbicide and the bioassay testing period. Avoid the use of other pesticides during the duration of the bioassay as they may damage the indicator crop(s).

4. Comparisons:

Ideally, an untreated check strip in a neighbouring field should be established and monitored for comparison since growing conditions can vary greatly from year to year and may result in erroneous results.

5. Assessment:

The site should be monitored regularly throughout the growing season. Watch for any damage to the crop such as thinning, yellowing or stunting. A yield sample should be taken and compared to an adjacent untreated field.

DO NOT ROTATE TO OTHER CROPS UNTIL THE BIOASSAY INDICATES NORMAL GROWTH WITH NO YIELD REDUCTIONS.

Failure to follow these recropping guidelines could result in injury to seeded crop(s).

ADHERE TO THESE PRODUCT LABELS FOR BROADLEAF WEEDS CONTROLLED, PRECAUTIONS, WARNINGS, RESTRICTIONS, TANK MIXING AND SPRAYING INSTRUCTIONS, ROTATIONAL CROPS AND DETAILED DIRECTIONS FOR USE REGARDING DOSAGE VARIATIONS ACCORDING TO SOIL TYPE.

SPRAYER CLEANUP:

To avoid subsequent injury to other crops, thoroughly clean application equipment immediately after spraying. Ensure that all traces of the product are removed. The following procedures are recommended:

1. Drain and flush tank, boom and all hoses for several minutes with clean water containing a household detergent. **Do not** clean the sprayer near desirable vegetation, wells or other water sources.
2. Fill the sprayer tank with clean water and add one litre of household ammonia (containing 3% ammonia) per 100 litres of water. Allow the solution to agitate for 15 minutes prior to flushing the solution through the boom and nozzles. Drain the system.
3. Remove the nozzles and screens and wash separately in a bucket containing the ammonia solution.
4. Thoroughly rinse the tank, hoses, booms, nozzles and screens with clean water for a minimum of 5 minutes to remove all traces of ammonia.
5. Dispose of all rinsings in accordance with provincial regulations.

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