



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

December 21, 2022

Bill Washburn
Registration Manager
Helena Agri-Enterprises, LLC
d/b/a Helena Chemical Company
225 Schilling Boulevard, Suite 300
Collierville, TN 38017

Subject: Registration Review Label Amendments Incorporating Mitigation Measures from the Interim Decisions for MCPA and Fluroxypyr and the National Marine Fisheries Services' (NMFS) Biological Opinion on the Effects of Bromoxynil on Pacific Salmonids
Product Name: HM-1638 Herbicide
EPA Registration Number: 5905-622
Application Date: 6/15/2021, 7/30/2021, and 8/20/2021
Decision Number: 577445, 581056, and 585961

Dear Bill Washburn:

The Agency, in accordance with the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, has completed reviewing all the information submitted with your application to support the Registration Review of the above referenced product in connection with the MCPA and Fluroxypyr Interim Decisions. The Agency has concluded that your submission is acceptable.

This letter also addresses the label mitigation resulting from the NMFS' Biological Opinion on the effects of Bromoxynil on Pacific salmonids. The Agency has concluded that your submission is also acceptable. The label referred to above, submitted in connection with registration under FIFRA, as amended, is acceptable.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one copy of the final printed labeling before you release the product for shipment with the new labeling. In accordance with 40 CFR 152.130(c), you may distribute or sell this product under the previously approved labeling for 12 months from the date of this letter. After 12 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.

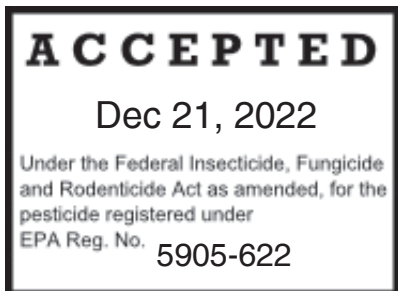
If you have any questions about this letter, please contact Quinn Gavin at gavin.quinn@epa.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "Linda Arrington", with a long horizontal flourish extending to the right.

Linda Arrington, Branch Chief
Risk Management and Implementation Branch 4
Pesticide Re-Evaluation Division
Office of Pesticide Programs

Enclosure



MCPA	GROUP	4	HERBICIDE
Bromoxynil	GROUP	6	HERBICIDE
Fluroxypyr	GROUP	4	HERBICIDE

HM-1638 Herbicide

(Alternate Brand Name: PARLAY)

For selective postemergence control of perennial and annual broadleaf weeds and volunteer potatoes in wheat, barley, or oats not under-seeded with a legume, Conservation Reserve Program (CRP) and Fallowland

Not for Sale, Sale Into, Distribution and/or Use in Nassau and Suffolk Counties of New York

ACTIVE INGREDIENTS:	% By Wt.
MCPA-EHE: 2-methyl-4-chlorophenoxyacetic acid, 2-ethylhexyl ester*	27.30%
Octanoic acid ester of bromoxynil (3,5-dibromo-4-hydroxybenzotrile)**	25.47%
Fluroxypyr 1-methylheptyl ester ((4-amino-3,5-dichloro-6-fluoro-2-pyridinyl)oxy) acetic acid, 1-methylheptyl ester ***	10.07%
OTHER INGREDIENTS:	37.16%
TOTAL	100.00%

Contains petroleum distillates.

* MCPA acid equivalent 17.5%, or 1.67 lb/gal; **Bromoxynil equivalent 17.5%, or 1.67 lb/gal;

***Fluroxypyr acid equivalent 7.0%, 0.67 lb/gal

KEEP OUT OF REACH OF CHILDREN	
CAUTION	
FIRST AID	
If swallowed	<ul style="list-style-type: none"> • Immediately call a poison control center or doctor. • Do not induce vomiting unless told to by a poison control center or doctor. • Do not give any liquid to the person. • Do not give anything by mouth to an unconscious person.
If in eyes	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
	•
HOT LINE NUMBER: Have the product container or label with you when calling a poison control center or doctor, or going for treatment. In case of health emergency, call CHEMTREC toll-free 1-800-424-9300	
NOTE TO PHYSICIAN: Contains petroleum distillate. Vomiting may cause aspiration pneumonia.	

See booklet for additional PRECAUTIONARY STATEMENTS, COMPLETE DIRECTIONS FOR USE

EPA Reg. No. 5905-622
EPA Est. No. _____

AD 102320
NET CONTENTS ____ GALS.



**Manufactured for
Helena Agri-Enterprises, LLC
225 Schilling Boulevard, Suite 300
Collierville, TN 38017**

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if swallowed. Causes moderate eye irritation. Avoid contact with eyes, skin or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Mixers, loaders, applicators, flaggers, and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of barrier laminate, butyl rubber, nitrile rubber, or Viton for cleaning equipment and mixing/loading
- Chemical-resistant apron for cleaning equipment and mixing/loading
- Shoes plus socks
- Protective eyewear

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

To reduce exposure to residues, wash the spray rig, tractor, and all other equipment used to handle or apply this product with water daily or before using the equipment for any other purpose.

ENGINEERING CONTROLS: When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.607(d-e)], the handler PPE may be reduced or modified as specified in the WPS.

Pilots must use an enclosed cockpit that meets the requirements listed in the WPS for agricultural pesticides [40 CFR 170.607(e)].

Handlers must use closed mixing loading systems during mixing/loading liquids for aerial applications to fallow land and high-acreage field crops.

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. If pesticide gets on skin, wash immediately with soap and water.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish, aquatic invertebrates and aquatic plants. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwater or rinsate. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Runoff of this product will be reduced by avoiding applications when rainfall is forecast to occur within 48 hours.

This chemical is known to leach through soil into groundwater under certain conditions as a result of label use. This chemical may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow.

SURFACE WATER ADVISORY STATEMENT

This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water.

This product is classified as having high potential for reaching surface water via runoff for several months or more after application.

A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of MCPA from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall or irrigation is expected to occur within 48 hours.

NON-TARGET ORGANISM ADVISORY STATEMENT: This product is toxic to plants and may adversely impact the forage and habitat of non-target organisms, including pollinators, in areas adjacent to the treated site. Protect the forage and habitat of non-target organisms by following label directions intended to minimize spray drift.

Reporting Ecological Incidents:

To report ecological incidents, including mortality, injury, or harm to plants and animals, call 901-761-0050.

PHYSICAL AND CHEMICAL HAZARDS

Do not mix or allow coming in contact with oxidizing agents. Hazardous chemical reaction may occur.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirement specific to your State or Tribe, consult the agency responsible for pesticide regulation.

Endangered Species Protection Requirements:

It is a Federal offense to use any pesticide in a manner that results in an unauthorized "take" (e.g., kill or otherwise harm) of an endangered species and certain threatened species, under the Endangered Species Act section 9. When using this product, you must follow the measures contained in the Endangered Species Protection Bulletin for the area in which you are applying the product. You must obtain a Bulletin no earlier than six months before using this product. To obtain Bulletins, consult <http://www.epa.gov/espp/>, call 1-844-447-3813, or email ESPP@epa.gov. You must use the Bulletin valid for the month in which you will apply the product.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry intervals. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

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

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is coveralls, chemical-resistant gloves made of barrier laminate, butyl rubber, nitrile rubber, or Viton, shoes plus socks, and protective eyewear.

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses. When applied to fallowland, keep unprotected persons out of treated areas until sprays have dried.

PRODUCT INFORMATION

This product provides selective postemergence control of perennial and annual broadleaf weeds and volunteer potatoes in wheat, barley, or oats not under-seeded with a legume, Conservation Reserve Program (CRP) and fallowland.

WEED RESISTANCE-MANAGEMENT

For resistance management, HM-1638 HERBICIDE is a Group 4 and Group 6 mode of action herbicide containing MCPA, bromoxynil and fluroxypyr. Any weed population may contain or develop plants naturally resistant to HM-1638 HERBICIDE and other Group 4 and Group 6 mode of action herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same field. Appropriate resistance management strategies should be followed.

To delay herbicide resistance, take one or more of the following steps:

- Rotate the use of HM-1638 HERBICIDE or other Group 4 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 if such use is permitted; where information on resistance in target weed species is available, use the less resistance-prone partner at a rate that will control the target weed(s) equally as well as the more resistance-prone partner. Consult your local extension service or certified crop advisor if you are unsure as to which active ingredient is currently less prone to resistance.
- Adopt an integrated weed-management program for herbicide use that includes scouting and uses historical information related to herbicide use and crop rotation, and that considers tillage (or other mechanical control methods), cultural (e.g., higher crop seeding rates; precision fertilizer application method and timing to favor the crop and not the weeds), biological (weed-competitive crops or varieties) and other management practices.

- Scout after herbicide application to monitor weed populations for early signs of resistance development. Indicators of possible herbicide resistance include: (1) failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds; (2) a spreading patch of non-controlled plants of a particular weed species; (3) surviving plants mixed with controlled individuals of the same species. If resistance is suspected, prevent weed seed production in the affected area by an alternative herbicide from a different group or by a mechanical method such as hoeing or tillage. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields, and planting clean seed.
- If a weed pest population continues to progress after treatment with this product, discontinue use of this product, and switch to another management strategy or herbicide with a different mode of action, if available.
- Contact your local extension specialist or certified crop advisors for 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 Helena Agri-Enterprises, LLC representatives at (901) 761-0050.

Fields should be scouted prior to application to identify the weed species present and their growth stage to determine if the intended application will be effective.

Fields should be scouted after application to verify that the treatment was effective.

Suspected herbicide-resistant weeds may be identified by these indicators:

- Failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds;
- A spreading patch of non-controlled plants of a particular weed species; and
- Surviving plants mixed with controlled individuals of the same species.

Report any incidence of non-performance of this product against a particular weed species to your Helena Agri-Enterprises retailer, representative or call 901-761-0050. If resistance is suspected, treat weed escapes with an herbicide having a different mechanism of action and/or use non-chemical means to remove escapes, as practical, with the goal of preventing further seed production.

Plant into weed-free fields and keep fields as weed-free as possible.

To the extent possible, use a diversified approach toward weed management. Whenever possible incorporate multiple weed-control practices such as mechanical cultivation, biological management practices, and crop rotation.

Fields with difficult to control weeds should be rotated to crops that allow the use of herbicides with alternative mechanisms of action or different management practices.

To the extent possible do not allow weed escapes to produce seeds, roots or tubers. Manage weed seeds at harvest and post-harvest to prevent a buildup of the weed seed-bank.

Prevent field-to-field and within-field movement of weed seed or vegetative propagules. Thoroughly clean plant residues from equipment before leaving fields.

Prevent an influx of weeds into the field by managing field borders.

Identify weeds present in the field through scouting and field history and understand their biology. The weed-control program should consider all of the weeds present.

Difficult to control weeds may require sequential applications of herbicides with differing mechanisms of action.

Apply this herbicide at the correct timing and rate needed to control the most difficult weed in the field.

Use a broad spectrum soil-applied herbicide with a mechanism of action that differs from this product as a foundation in a weed-control program. Do not use more than two applications of this or any other herbicide with the same mechanism of action within a single growing season unless mixed with an herbicide with another mechanism of action with an overlapping spectrum for the difficult-to-control weeds.

If resistance is suspected, treat weed escapes with an herbicide with a different MOA or use non-chemical methods to remove escapes.

Contact your local sales representative, crop advisor, or extension agent to find out if suspected resistant weeds to these MOAs have been found in your region. Do not assume that each listed weed is being controlled by multiple mechanisms of action. Co-formulated active ingredients are intended to broaden the spectrum of weeds that are controlled. Some weeds may be controlled by only one of the active ingredient in this product.

USE RESTRICTIONS

- Do not allow spray drift to come in contact with or apply this product directly to susceptible broadleaf plants or broadleaf crops, including but not limited to the following: alfalfa, canola, cotton, edible beans, grapes, lentils, lettuce, mustard, peas, potatoes, radishes, soybeans, sugar beets, sunflowers, tobacco or tomatoes.
- Do not apply more than 2.4 pints (0.5 lbs. a.e. MCPA, 0.5 lbs. a.e. bromoxynil and 0.2 lbs. a.e. fluroxypyr) of this product per acre per year.
- When applying this product, do not contaminate water used for domestic purposes or irrigation ditches.
- Do not apply this product through any type of irrigation system (i.e., chemigation).
- Do not apply with backpack or handheld application equipment.
- Do not apply this product to golf course turf.
- Crops listed on this label (wheat, barley, or oats not under-seeded with a legume) may be planted within 120 days of application. Do not plant other crops within 120 days of application.
- This product is persistent and may be present in plant materials for over 30 days after application. Do not use treated plant material or manure from animals that have grazed or consumed forage from treated areas for compost, mulch, or mushroom spawn until 30 days after application.
- Animals that have been fed fluroxypyr treated forage must be fed forage free of fluroxypyr for at least 3 days before they are moved off the treated property.
- Handlers must use closed mixing loading systems during mixing/loading liquids for aerial applications to fallow land and high-acreage field crops.
- Aerial application to fallow land is restricted within 25 feet of residential areas (e.g., homes, schools, playgrounds, shopping areas, hospitals, etc.).
- **Not for Sale, Sale Into, Distribution and/or Use in Nassau and Suffolk Counties of New York**

SPRAY DRIFT

Aerial Applications:

- Do not release spray at a height greater than 4 ft above the ground or vegetative canopy, unless a greater application height is necessary for pilot safety.
- Applicators must use ½ swath displacement upwind at the downwind edge of the field.
- Do not apply when wind speeds exceed 10 miles per hour at the application site.
- Select a nozzle and pressure that deliver medium or coarser droplets
- The distance of the outer most nozzles on the boom must not exceed 75% of the length of the wingspan or 90% of the rotor diameter
- Do not apply during temperature inversions.

Ground Boom Applications:

- User must only apply with the release height recommended by the manufacturer, but no more than 4 feet above the ground or crop canopy.
- Select a nozzle and pressure that deliver medium or coarser droplets.
- Do not apply when wind speeds exceed 10 miles per hour at the application site.
- Do not apply during temperature inversions.

Boomless Ground Applications:

- Applicators are required to select the nozzle and pressure that deliver a medium or coarser droplet size (ASABE S572) for all applications.
- Do not apply when wind speeds exceed 15 miles per hour at the application site.
- Do not apply during temperature inversions.

SPRAY DRIFT ADVISORIES

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT.
BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

IMPORTANCE OF DROPLET SIZE

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

Controlling Droplet Size – Ground Boom

- Volume - Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- Pressure - Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
- Spray Nozzle - Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

Controlling Droplet Size – Aircraft

- Adjust Nozzles - Follow nozzle manufacturers' recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight.

BOOM HEIGHT – Ground Boom

For ground equipment, the boom should remain level with the crop and have minimal bounce.

RELEASE HEIGHT - Aircraft

Higher release heights increase the potential for spray drift.

SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

TEMPERATURE AND HUMIDITY

When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

TEMPERATURE INVERSIONS

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

WIND

Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS.

Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

Boomless Ground Applications:

- Setting nozzles at the lowest effective height will help to reduce the potential for spray drift.

Handheld Technology Applications:

- Take precautions to minimize spray drift.

MIXING INSTRUCTIONS

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture. This product may be applied in tank mixtures with additive products such as surfactants, adjuvants and drift control agents, and with most commonly used grass herbicides, at specified rates, as long as tank mixing is not prohibited by the label(s) of the tank mix partner and the tank mix partner products are labeled for the timing and method of application for the use site to be treated.

If compatibility with another product is not known, perform a small-scale (jar) test to determine compatibility (see instructions below). When an adjuvant is to be used with this product, Helena Agri-Enterprises, LLC recommends the use of a Chemical Producers and Distributors Association certified adjuvant.

Note: When adding ingredients to the mixture, allow time for each ingredient to be thoroughly mixed before adding the next. Be sure to agitate spray mixture before use if allowed to stand after mixing.

1. Fill spray tank with water equal to 1/2 to 3/4 of the required spray volume and start agitation.
2. Add the specified amount of this product.
3. Add any grass herbicides, surfactants, adjuvants or drift control agents according to the respective manufacturer's instructions.
4. Agitate during final filling of the spray tank with water and maintain sufficient agitation during application to ensure uniformity of the spray mixture.

Tank Mix Compatibility (Jar) Test

- 1) Mix the desired tank mix ingredients in their relative proportions in a clear glass quart jar with lid.
- 2) Invert the jar containing the mixture several times and observe the mixture for approximately 1/2 hour.
- 3) If the mixture balls-up, forms flakes, sludges, gels, oily films or layers, or other precipitates, it is not compatible and the tank mix combinations should not be used.

APPLICATION INFORMATION

Broadleaf Weeds Controlled or Suppressed		
Bedstraw (cleavers)	Henbit	Poppy, horned
Bindweed, field [†]	Horsetail, field [†]	Potato, volunteer [†]
Bindweed, hedge	Horseweed (marestail)	Prickly lettuce
Buckwheat, spp.	Jimsonweed	Puncturevine
Canola, volunteer	Knawel	Purslane, common
Chamomile, corn	Knotweed	Radish, wild
Chickweed	Kochia ¹	Ragweed, common
Clover, white	Ladysthumb	Rocket spp.
Cocklebur	Lambsquarters	Sage, lanceleaf
Cockle, cow	Mallow, common [†]	Sesbania, hemp
Coffeeweed	Mallow, venice	Shepherd's purse
Devilsclaw [†]	Marshelder	Smartweed spp.
Fiddleneck	Mayweed	Sowthistle, annual
Flax, volunteer	Morning glory	Sunflower
Fumitory	Mustard spp. [†]	Tarweed
Grape spp.	Nightshade spp.	Thistle, Russian
Gromwell, corn	Pennycress, field [†]	Velvetleaf
Groundsel	Pepperweed	Waterhemp, tall
Hemp dogbane	Pigweed spp.	

[†]**Indicates Suppression Only** - Suppression is a reduction in weed competition (reduction in population or vigor) as compared to untreated areas. The degree of weed control and duration of effect may vary with weed size, density, application rate, coverage, and growing conditions before, during and after treatment.

¹⁾ Includes biotypes that are herbicide-resistant or tolerant.

Weeds germinating after spraying will not be controlled.

Management of Kochia Biotypes

Research indicates many biotypes of kochia may occur within a single field and while kochia biotypes can vary in their susceptibility to this product, in general all biotypes will be suppressed or controlled at the labeled rate of 1 to 1-1/2 pints per acre. A shift to more tolerant biotypes within a field may occur if this product is applied at rates lower than recommended.

Application Timing

Only weeds that have emerged at the time of application will be controlled so be sure to apply to actively growing weeds. Weed control may be reduced and the risk of crop injury (at all stages of growth) may increase if extreme growing conditions (such as drought or near-freezing temperatures) occur prior to, at, or following application. Control may be decreased if target plant foliage is wet at the time of application. Applications of this product are rainfast within 1 hour after application.

Effect of Temperature on Herbicidal Activity

The herbicidal activity of this product is influenced by weather conditions. Optimum herbicidal activity requires active plant growth and temperatures between 55°F to 75°F. Reduced efficacy will occur when

temperatures are below 45°F or above 85°F. Weed control and crop tolerance may be reduced if frost occurs before or shortly after application (3 days).

Spray Coverage

Use sufficient spray volume to provide thorough coverage and a uniform spray pattern. For best results (and to minimize spray drift), apply in a spray volume of 8 gallons or more per acre by ground and 3 or more gallons of total spray volume per acre by air. Spray volume should be increased as weed density and vegetative canopy increase in order to obtain equivalent weed control; however, do not exceed 40 gallons per acre total spray volume. Rather than increasing boom pressure, decrease spraying speed or use larger nozzle tips to increase spray volume.

Use only nozzle types and spray equipment designed for herbicide application. To reduce spray drift, be sure to follow the precautions under the heading, "Spray Drift Management".

Adjuvants

To improve weed control, a high-quality adjuvant labeled for use on growing crops may be used. An adjuvant can optimize herbicidal activity when applications are made at lower carrier volumes, under conditions of cool temperature, low relative humidity or drought, or to small, heavily pubescent kochia. When an adjuvant is to be used with this product, Helena Agri-Enterprises, LLC recommends the use of a Chemical Producers and Distributors Association certified adjuvant.

Spot Treatments

Only apply using a calibrated boom sprayer using the directions below:

Do not apply using backpack or handheld application equipment.

Application rates in the table below are based on an area of 1,000 square feet.

Mix the amount of this product (fluid ounces or ml) corresponding to the desired broadcast rate in one or more gallons of spray.

To calculate the amount of this product required for larger areas, multiply the table value (fluid ounces or ml) by the area to be treated in "thousands" of square feet. An area of 1,000 square feet is approximately 10.5 X 10.5 yards (strides) in size.

For example:

If the area to be treated is 3,500 square feet, multiply the table value by 3.5 (calc. $3,500 \div 1,000 = 3.5$).

Broadcast Rate Conversion Table for Spot Treatments	
Broadcast Rate (Pints per Acre)	HM-1638 per Gallon (Fluid Ounces (ml))
1	0.37 (11)
1-1/2	0.55 (16.3)
2	0.74 (22)

Application Rates

In general, the application rates at the lower end of the specified rate range will be efficacious when applied to susceptible weed species with young, succulent growth. Use the higher rates within the rate range when applying to less sensitive species, perennials, and under conditions where control is more difficult (e.g., when plants are stressed due to drought or extreme temperatures, in dense weed stands and/or the weeds are larger). Higher rates will also be needed to control or suppress weeds in areas where competition from crops is not present (e.g., fallowland).

Sprayer Cleanup

To avoid injury to desirable plants, before applying other chemicals with the equipment used to apply this product, all equipment must be thoroughly cleaned.

1. After applying this product, flush and rinse application equipment with water thoroughly, disposing of the water according to the disposal instructions in this label. All rinse water must be disposed of in compliance with local, state and federal guidelines.

2. Hose down the interior surfaces of the tank, flushing the tank, hoses, boom and nozzles with clean water for 10 minutes.
3. Fill the tank with water and recirculate for 15 minutes.
4. Spray part of the mixture through the hoses, boom and nozzles and drain the tank.
5. Remove the nozzles and screens and clean separately.
6. If the spray equipment will be used on crops other than those labeled for this product, repeat steps 1 and 2 and thoroughly wash the outside of spray tank and the boom.

WHEAT, BARLEY, OATS

Application Timing

To control listed broadleaf weeds, apply as a postemergence broadcast treatment to actively growing wheat, barley or oats from the 2-leaf stage up to and including flag leaf emergence (Zadok's scale 39). Because only weeds that have emerged at the time application will be controlled, be sure to apply when weeds are actively growing but before weeds are 8 inches tall or vining.

For perennial weeds (such as Canada thistle), apply when the majority of the basal leaves have emerged from the soil up to bud stage to obtain season-long control.

To suppress volunteer potatoes, apply before potato plants are 4 inches tall.

The risk of crop injury at all stages of growth and poor weed control is increased if the application is made and extreme growing conditions (such as drought or near freezing temperatures) occur prior to, at, and following the application. Reduced weed control may also occur during these conditions.

Broadcast Application Rates

For complete listing of weeds controlled or suppressed, refer to the "Broadleaf Weeds Controlled or Suppressed" section.

For seedlings of susceptible species <4 inches tall: Apply 1 pint per acre.

For seedlings of susceptible species 4 to 8 inches tall or vining: Apply 1-1/2 pints per acre.

For volunteer potatoes: Apply 1-1/2 pints per acre.

Note: Kochia seedlings less than 4 inches tall (including ALS resistant biotypes) will be controlled using the 1 pint per acre rate. However, when conditions for control are less favorable, such as under drought or cool temperature, a rate of 1-1/2 pints per acre will provide more consistent control of kochia seedlings 1 to 4 inches tall. For more consistent control of small kochia, apply when the plants are at least 1 inch tall. A rate of 1-1/2 pints per acre should be used for optimal control of dicamba tolerant kochia populations (refer to the "Management of Kochia Biotypes" in the "Broadleaf Weeds Controlled or Suppressed" section above).

Spot Applications

Spot applications may be made using rates and spray volume equivalent to a broadcast application (refer to the "Spot Treatment" instructions in the "Application Information" section above).

Application Restrictions

- Do not harvest treated forage or allow livestock to graze treated areas within 45 days of application.
- Do not apply more than 2.4 pints (0.5 lbs. a.e. MCPA, 0.5 lbs. a.e. bromoxynil and 0.2 lbs. a.e. fluroxypyr) of this product per acre per year.
- Do not apply within 40 days prior to harvesting grain and straw or within 14 days prior to cutting hay.
- Do not apply when crop canopy covers the weeds as poor control will result.

CONSERVATION RESERVE PROGRAM (CRP)

Application Timing

Apply at a rate of 1 to 2 pints per acre, depending upon the susceptibility of the weed species. Apply to grasses from the 3-leaf stage. Unless otherwise specified below, apply when broadleaf weeds are up to the 8-leaf stage, 4 inches in height or 2 inches in diameter, whichever comes first.

Kochia seedlings less than 4 inches tall (including ALS resistant biotypes) will be controlled using the 1 pint per acre rate. However, when conditions for control are less favorable, such as under drought or cool temperature, a rate of 1-1/2 pints per acre will provide more consistent control of kochia seedlings 1 to 4 inches tall. For more consistent control of small kochia, apply when the plants are at least 1 inch tall. A rate of 1-1/2 pints per acre should be used for optimal control of dicamba tolerant kochia populations (refer to the "Management of Kochia Biotypes" in the "Broadleaf Weeds Controlled or Suppressed" section above).

Application Precautions

- If legumes are included in CRP area planting, severe injury may occur.

Application Restrictions

- Do not allow livestock to graze in treated areas or feed treated grass to livestock.
- Crops listed on this label (wheat, barley, or oats not under-seeded with a legume) may be planted within 120 days of application. Do not plant other crops within 120 days of application.

FALLOWLAND

Application Timing

Apply at a rate of 1 to 2 pints per acre, depending upon the susceptibility of the weed species. Apply to grasses from the 3-leaf stage. Unless otherwise specified below, apply when broadleaf weeds are up to the 8-leaf stage, 4 inches in height or 2 inches in diameter, whichever comes first.

Kochia seedlings less than 4 inches tall (including ALS resistant biotypes) will be controlled using the 1 pint per acre rate. However, when conditions for control are less favorable, such as under drought or cool temperature, a rate of 1-1/2 pints per acre will provide more consistent control of kochia seedlings 1 to 4 inches tall. For more consistent control of small kochia, apply when the plants are at least 1 inch tall. A rate of 1-1/2 pints per acre should be used for optimal control of dicamba tolerant kochia populations (refer to the "Management of Kochia Biotypes" in the "Broadleaf Weeds Controlled or Suppressed" section above).

Application Restrictions

- Do not make more than two applications per year, with a minimum retreatment interval of 21 days.
- Do not apply more than 2.4 pints (0.5 lbs. a.e. MCPA, 0.5 lbs. a.e. bromoxynil and 0.2 lbs. a.e. fluroxypyr) of this product per acre per year.
- Do not allow livestock to graze in treated areas or feed treated plant material to livestock.
- Do not plant any crop until 90 days after application. Within 90 to 120 days after application, plant only crops listed on this label (wheat, barley, or oats not under-seeded with a legume). Do not plant other crops within 120 days of application.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

PESTICIDE STORAGE: Store above 10°F or warm and agitate before use.

PESTICIDE DISPOSAL: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by user according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER HANDLING:

Nonrefillable Containers 5 Gallons or Less: Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

Nonrefillable Containers larger than 5 Gallons: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Refillable container larger than 5 gallons: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident, call CHEMTREC 1-800-424-9300.

**CONDITIONS OF SALE - LIMITED WARRANTY
AND LIMITATIONS OF LIABILITY AND REMEDIES**

Read the Conditions of Sale - Warranty and Limitations of Liability and Remedies before using this product. If the terms are not acceptable, return the product, unopened, and the full purchase price will be refunded.

The directions on this label must be followed carefully. Insufficient control of pests and/or injury to the crop to which the product is applied may result from the occurrence of extraordinary or unusual weather conditions or the failure to follow the label directions or good application practices, all of which are beyond the control of Helena Agri-Enterprises, LLC (the "Company") or seller. In addition, failure to follow label directions may cause injury to crops, animals, man or the environment. The Company warrants that this product conforms to the chemical description on the label and is reasonably fit for the purpose referred to in the directions for use subject to the factors noted above which are beyond the control of the Company. To the extent consistent with applicable law, the Company makes no other warranties or representations of any kind, express or implied, concerning the product, including no implied warranty of merchantability or fitness for any particular purpose, and no such warranty shall be implied by law.

To the extent consistent with applicable law, the exclusive remedy against the Company for any cause of action relating to the handling or use of this product shall be limited to, at Helena Agri-Enterprises, LLC's election, one of the following:

1. Refund of the purchase price paid by buyer or user for product bought, or
2. Replacement of the product used

To the extent allowed by law, the Company shall not be liable and any and all claims against the Company are waived for special, indirect, incidental, or consequential damages or expense of any nature, including, but not limited to, loss of profits or income. The Company and the seller offer this product and the buyer and user accept it, subject to the foregoing conditions of sale and limitation of warranty, liability and remedies.