



U.S. ENVIRONMENTAL PROTECTION AGENCY

Office of Pesticide Programs  
Registration Division (7505P)  
1200 Pennsylvania Ave., N.W.  
Washington, D.C. 20460

EPA Reg. Number:

5905-643

Date of Issuance:

12/2/21

NOTICE OF PESTICIDE:

Registration  
 Reregistration  
(under FIFRA, as amended)

Term of Issuance:

Unconditional

Name of Pesticide Product:

HM-1604 Herbicide

Name and Address of Registrant (include ZIP Code):

Helena Agri-Enterprises, LLC  
225 Schilling Blvd. Suite 300  
Collierville, TN 38017

**Note:** Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered under the Federal Insecticide, Fungicide, and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is unconditionally registered in accordance with FIFRA section 3(c)(5) provided that you:

1. Submit and/or cite all data required for registration/reregistration/registration review of your product when the Agency requires all registrants of similar products to submit such data.
2. Submit one copy of the revised final printed label for the record before you release the product for shipment.

*Continues page 2*

Signature of Approving Official:

Mindy Ondish, Product Manager 23  
Herbicide Branch, Registration Division (7505P)

Date:

12/2/21

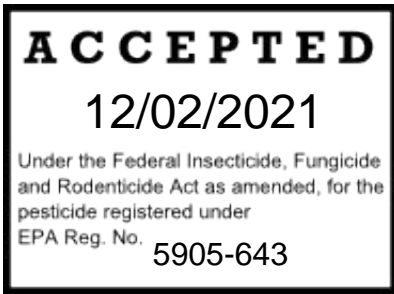
Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under FIFRA and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under 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.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records. Please also note that the record for this product currently contains the following CSFs:

- Basic CSF dated 4/16/2021
- Alternate CSF A-B dated 4/26/2021

If you have any questions, please contact Julia Kerr by phone at 202-566-2810, or via email at [kerr.julia@epa.gov](mailto:kerr.julia@epa.gov)

Enclosure



Dicamba Acid	GROUP	4	HERBICIDE
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2,4-D Acid	GROUP	4	HERBICIDE
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**HM-1604 HERBICIDE**

For control of a wide-spectrum of annual, biennial, and perennial broadleaf weeds and brush in Pastures, Rangelands and Grass (Hay, Silage); Conservation Reserve Program land; General Farmstead Areas; Post-Harvest, Fallow, Crop Stubble and Set Aside Acres; Forest Management; Sorghum; Wheat; Roadsides, Rights-of-way, Industrial Sites and similar Non-crop areas.

ACTIVE INGREDIENT(S):	% by wt.
Dicamba acid: 3,6-dichloro-o-anisic acid* .....	10.80 %
2,4-D acid: Dimethylamine salt of 2,4-dichlorophenoxyacetic acid** .....	29.10 %
OTHER INGREDIENTS: .....	60.10 %
TOTAL .....	100.00 %

Equivalent to:  
 \*Dicamba Acid, 1.0 lbs./gal (CAS # 1918-00-9)  
 \*\*2,4-D Acid equivalent, 2.3 lbs./gal (CAS # 94-75-7) Isomer specific by AOAC Method 6.D01-5 (12th Ed.)

**KEEP OUT OF REACH OF CHILDREN**

**WARNING / AVISO**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.  
 (If you do not understand the label, find someone to explain it you in detail.)

FIRST AID	
<b>IF IN EYES:</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice</li> </ul>
<b>IF SWALLOWED:</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have a person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious or convulsing person.</li> </ul>
<b>IF INHALED:</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>HOT LINE NUMBER</b> - Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-424-9300 for emergency medical treatment information.	
<b>NOTE TO PHYSICIAN:</b> Probable mucosal damage may contraindicate the use of gastric lavage.	

**SEE INSIDE PANEL FOR ADDITIONAL PRECAUTIONS AND DIRECTIONS FOR USE**

EPA Reg. No. 5905-643  
 EPA Est. No. \_\_\_\_\_

NET CONTENTS: \_\_\_\_\_  
 AD XXXXXX



**MANUFACTURED FOR  
 HELENA AGRI-ENTERPRISES, LLC  
 225 SCHILLING BOULEVARD, SUITE 300  
 COLLIERVILLE, TN 38017**

## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

#### WARNING / AVISO

Causes substantial but temporary eye injury. Harmful if swallowed or inhaled. Do not get in eyes or on clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals

#### PERSONAL PROTECTIVE EQUIPMENT (PPE)

All mixers, loaders, applicators, flaggers, and other handlers must wear:

1. Long-sleeved shirt and long pants.
2. Shoes and socks.
3. Chemical resistant gloves (made of barrier laminate, butyl rubber  $\geq$  14 mils, neoprene rubber  $\geq$  14 mils, polyvinyl chloride (PVC)  $\geq$  14 mils, or Viton  $\geq$  14 mils) (except for applicators using groundboom equipment, pilots, and flaggers)
4. Chemical resistant apron when applying with any handheld nozzle or equipment, mixing or loading, cleaning up spills or equipment, or otherwise exposed to the concentrate.
5. Protective eyewear (goggles or face shield)

See engineering controls for additional requirements.

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. After each day of use, clothing or PPE must not be re-used until it has been cleaned.

#### ENGINEERING CONTROLS

When handlers use 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 (e-f)], the handler PPE requirements may be reduced or modified as specified in the WPS.

Pilots must use cockpits in a manner that meets the requirements, listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.607(f)].

#### USER SAFETY RECOMMENDATIONS

- Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Users should 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

2,4-D is toxic to fish and aquatic invertebrates. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas.

Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash water or rinsate.

2,4-D has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in

groundwater contamination. Application around a cistern or well may result in contamination of drinking water or groundwater.

**Groundwater Contamination:** Most cases of groundwater contamination involving phenoxy herbicides such as 2,4-D have been associated with mixing/loading and disposal sites. Caution should be exercised when handling 2,4-D pesticides at such sites to prevent contamination of groundwater supplies. Use of closed systems for mixing or transferring this pesticide will reduce the probability of spills. Placement of the mixing/loading equipment on an impervious pad to contain spills will help prevent groundwater contamination.

**Endangered Species Concerns:** The use of any pesticide in a manner that may kill or otherwise harm and endangered species or adversely modify their habitat is a violation of federal law.

### PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near any oxidizing or reducing agents.

### 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 requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation. This labeling must be in the user's possession during application.

### 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 interval. 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 48 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 worn over short-sleeved shirt and short pants.
- Chemical resistant gloves made of barrier laminate, butyl rubber  $\geq$  14 mils, neoprene rubber  $\geq$  14 mils, polyvinyl chloride (PVC)  $\geq$  14 mils, or Viton  $\geq$  14 mils .
- Chemical resistant footwear plus socks
- Chemical-resistant headgear for overhead exposure
- 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.

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.

USE REQUIREMENTS FOR PASTURES, PERENNIAL GRASSLANDS, RANGELAND, FALLOW LAND AND NONCROP AREAS: Do not enter treated areas until spray has dried. For early entry to treated areas, wear eye protection, chemical-resistant gloves, long-sleeved shirt, long pants, shoes and socks.

TURF USE REQUIREMENTS: Keep unprotected persons out of treated areas until sprays have dried.

NOTE: For application to turf being grown for sale or other commercial use as sod, or for commercial seed production, or for research purposes, follow AGRICULTURAL USE REQUIREMENTS on this label.

## RESISTANCE MANAGEMENT

For resistance management, **HM-1604 HERBICIDE** is a Group 4 mode of action herbicide containing 2,4-D acid and dicamba acid. Any weed population may contain or develop plants naturally resistant to **HM-1604 HERBICIDE** and other Group 4 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-1604 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 before and 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.

## PRODUCT INFORMATION

**HM-1604 HERBICIDE** is a postemergence herbicide for controlling a wide spectrum of annual, biennial, and perennial broadleaf weeds and brush in pastures, rangeland, and grass (hay, silage); sorghum; wheat; conservation reserve program land; postharvest, fallow, crop stubble, set-aside acres; general farmstead areas; certain noncrop areas; and for forest management.

### Mode of Action

**HM-1604 HERBICIDE** contains two active ingredients uniquely formulated to be used alone or tank mixed with other listed products as well as liquid fertilizer solutions. **HM-1604 HERBICIDE** is readily absorbed by plants through shoot and root uptake, translocates throughout the plant's system, and accumulates in areas of active growth. **HM-1604 HERBICIDE** interferes with the plant's growth hormones (auxins) resulting in death of many broadleaf weeds.

For best results, thoroughly clean sprayer equipment (tank, lines and nozzles) immediately after use by flushing system with water and heavy duty detergent or other suitable tank cleaner.

## APPLICATION INSTRUCTIONS

Apply **HM-1604 HERBICIDE** at the rates and growth stages listed in Tables 1 and 2 as follows unless instructed differently by section on "**Food/Feed Crop Specific Information**" or "**Non-Food/Feed Use (Land not Harvested, Grazed or Foraged)-Specific Information.**" Use either water or sprayable liquid fertilizer as a carrier for **HM-1604 HERBICIDE**. Use sprayable liquid fertilizer as the carrier in preplant or pre-emergence use for all crops listed on this label. Postemergence uses with sprayable fluid fertilizer may be made on pasture, hayland, or wheat crops only. The most effective application rate and timing varies based on the target weed species (refer to Table I). In mixed populations of weeds the correct rate is determined by the weed species requiring the highest rate. Delaying application permits weeds to exceed the maximum size and will prevent adequate control. For certain specified applications liquid fertilizer or oil may replace part or all of the water as diluent. If dry flowable (DF), wettable powder (WP) or flowable (F) tank mix products are to be used, these should generally be added to the spray tank first.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions, limitations, and directions for use on all product labels involved in the tank mixture. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Apply product only when active weed growth is evident.

## CHEMIGATION PROHIBITION

Do not apply this product through any type of irrigation system.

### Spray Coverage:

Weeds must be thoroughly covered with spray. Dense leaf canopies shelter smaller weeds and prevent adequate spray coverage.

### Sensitive Crop Precautions:

**HM-1604 HERBICIDE** may cause injury to desirable trees and plants, particularly beans, cotton, flowers, fruit trees, grapes, ornamentals, peas, potatoes, soybeans, sunflowers, tobacco, tomatoes and other broadleaf plants when contacting their roots, stems or foliage. At high temperatures (about 85 degrees or higher), vapors from this product may cause injury to the aforementioned susceptible crops. These plants are most sensitive to **HM-1604 HERBICIDE** during their development or growing stage. Do not treat areas where either possible downward movement into the soil or surface washing may cause contact of **HM-1604 HERBICIDE** with the roots of desirable trees and shrubs.



### **Drift Reduction Information:**

The following information may be helpful in reducing possible spray drift from ground or aerial applications. Avoid making applications when spray particle may be carried by air currents to areas where sensitive crops and plants are growing. Do not spray near sensitive plants if the wind is gusty or in excess of 5 mph and moving in the direction of nearby sensitive crops or if a temperature inversion exists. Always determine the direction and distance of possible spray drift prior to application. Leave an adequate buffer zone between area to be treated and sensitive plants. Coarse sprays are less likely to drift out of the target area than fine sprays. Properly maintain and calibrate all spray equipment. The use of agriculturally accepted drift retardants are acceptable and advised. Avoid applications within the vicinity of susceptible plants when at all possible. Do not apply in greenhouses.

### **AERIAL APPLICATION METHODS AND EQUIPMENT**

**Water Volume:** Use 3-10 gallons of water per acre. Use the higher spray volume when treating dense or tall vegetation.

**Application Equipment:** Select nozzles designed to produce minimal amounts of fine spray particles. Make applications at the lowest stage height to reduce the exposure of spray droplets to evaporation and wind. The applicator must follow the most restrictive use precautions to avoid drift hazards, including those found in the this labeling as well as applicable state and local regulations and ordinances.

### **SPRAY DRIFT MANAGEMENT**

A variety of factors including weather conditions (e.g. wind direction, wind speed, temperature, relative humidity) and method of application (e.g., ground, aerial, and airblast) can influence pesticide drift. The applicator must evaluate all factors and make appropriate adjustments when applying this product.

#### **Droplet Size**

When applying sprays that contain 2,4-D as the sole active ingredient, or when applying sprays that contain 2,4-D mixed with active ingredients that require a Coarse or coarser spray, apply only as a Coarse or coarser spray (ASABE standard 572) or a volume mean diameter of 385 microns or greater for spinning atomizer nozzles.

When applying sprays that contain 2,4-D mixed with other active ingredients that require a Medium or more fine spray, apply only as a Medium or coarser spray (ASABE standard 572) or a volume mean diameter of 300 microns or greater for spinning atomizer nozzles.

#### **Wind Speed**

Do not apply at wind speeds greater than 15 mph. Only apply this product if the wind direction favors on-target deposition and are not sensitive areas (including, but not limited to, residential areas, bodies of water, known habitat for nontarget species, nontarget crops) within 250 feet downwind. If applying a Medium spray, leave one swath unsprayed at the downwind edge of the treated field.

#### **Temperature Inversions**

If applying at wind speeds less than 3 mph, the applicator must determine if: a) conditions of temperature inversion exist, or b) stable atmospheric conditions exist at or below nozzle height. Do not make applications into areas of temperature inversions or stable atmospheric conditions.

2,4-D esters may volatilize during conditions of low humidity and high temperatures. Do not apply during conditions of low humidity and high temperatures

## Susceptible Plants

Do not apply under circumstances where spray drift may occur to food, forage, or other plantings that might be damaged or crops thereof rendered unfit for sale, use or consumption. Susceptible crops include, but are not limited to cotton, okra, flowers, grapes (in growing stage), fruit trees (foliage), soybeans (vegetative stage), ornamentals, sunflowers, tomatoes, beans, and other vegetables, or tobacco. Small amounts of spray drift that might not be visible may injure susceptible broadleaf plants.

## Other State and Local Requirements

Applicators must follow all state and local pesticide drift requirements regarding application of 2,4-D herbicides. Where states have more stringent regulations, they must be observed.

## Equipment

All aerial equipment and ground application equipment must be properly maintained and calibrated using appropriate carriers or surrogates.

For aerial equipment, the boom length must not exceed 75% of the wingspan or 90% of the rotor blade diameter.

Release spray at the lowest height consistent with efficacy and flight safety. Do not release spray at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety. This requirement does not apply to forestry or rights-of-way applications.

When applications are made in a crosswind, the swath will be displaced downwind. The applicator must compensate for this by adjusting the path of the aircraft upwind.

For ground boom application, do not apply with a nozzle height greater than 4 feet above the crop canopy.

## SENSITIVE AREAS

The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g. when wind is blowing away from the sensitive areas).

**Table 1. Application Rate and Timing – Annual Weeds**

For use in non-food/feed crops only: the addition of liquid fertilizer (28-0-0, 32-0-0) solutions at ½ the GPA spray solution has shown to give increased efficacy.

Weeds Controlled (including ALS – and triazine-resistant)	Rate Per Acre (according to weed growth stage)					
	1/3 pints	2/3 pints	1 pints	1 1/8 pints	1 2/3 pints	2 pints
Amaranth, Palmer						actively growing
, Powell						actively growing
, Spiny						actively growing
Beebalm, Spotted	-	-	-	pre-bloom	post-bloom	-
Black Medic						
Broomweed	1-3"	3" branching	-	branching	-	after branching
Buckwheat, Wild	-	1-6"	-	-	-	-
Buffalobur	-	-	-	1-6"	-	Flowering
Burdock	-	pre-flower	-	-	-	-
Buttercup	-	pre-flower	-	early bloom	late bloom	-
Carpetweed						actively growing
Chickweed, Common	-	Seedling	1-3"	-	-	-

Weeds Controlled (including ALS – and triazine-resistant)	Rate Per Acre (according to weed growth stage)					
	1/3 pints	2/3 pints	1 pints	1 1/8 pints	1 2/3 pints	2 pints
Cockle, Cow	-	< 3"	-	-	-	-
Cocklebur, Common	-	1-6"	6-12"	12-18"	-	-
Coreopsis, Plains	1-4"	1-6"	-	-	-	-
Croton, Woolly	-	4-12"	12-30"	-	-	-
Dogfennel	-	-	-	10-15"	-	-
Evening Primrose	-	< 2"	-	2-6"	-	-
Flax	-	< 2"	-	-	-	-
Fleabane, Annual	-	1-4"	4-8"	8"	-	-
Flixweed	-	< 3"	-	-	-	-
Henbit	-	-	preflower	-	flower	-
Knotweed Spp.	-	< 3" runners	-	> 3" runners	-	actively growing
Kochia	-	1-6"	6-10"	10-20"	-	actively growing
Lambsquarters, Common	-	1-6"	6-10"	10-20"	-	actively growing
Mallow, Common	-	< 3"	-	-	-	-
Marestail (Horseweed)						actively growing
Morning glory, Ivyleaf	-	pre-flower	-	-	-	-
, Tall	-	pre-flower	-	post-flower	-	-
Mustards, Annual		Rosette		early bolt	-	-
, Tansy	-	< 3"			-	-
Pennycress, Field	-	-	-	rosette	-	-
Pepperweed, Virginia	-	-	1-3"	3-6"	after branching	-
Pigweed, Prostrate	-	< 3"	-	-	-	-
, Redroot	-	< 3"	3-10"	-	-	-
, Smooth	-	< 3"	-	-	-	-
, Tumble	-	< 3"	-	mature	-	-
Pineapple Weed						actively growing
Poorjoe	-	prior to flower	-	-	-	actively growing
Puncturevine						actively growing
Purslane, Common		< 3"	3-8"		-	-
Ragweed, Common				>10"	-	-
Western, Lanceleaf	1-3"	3-6"	6-10"	actively growing	-	-
Rocket, London						actively growing
, Yellow						actively growing
Sedge <sup>1</sup>	-	-	-	-	-	-
Shepherdspurse	-	Rosette	-	-	-	-
Smartweed, Pennsylvania	-	< 4"	-	-	4-12"	-
Sneezeweed, Bitter	-	1-4"	prior to flower	flower	-	-
Sowthistle	-	Rosette	-	bolting	-	-
Sunflower	-	1-3"	3-6"	6-24"	-	-
Thistle, Russian	-	-	-	rosette	-	-
Velvetleaf	-	< 6"	6-20"	> 20"	-	-

<sup>1</sup> For use in non-food/feed crop only. Adding crop oil concentrate has shown to improve performance on actively growing annual sedge.

**Table 2. Application Rate and Timing – Biennial and Perennial Weeds.**

The addition of liquid fertilizer (28-0-0, 32-0-0) at ½ the GPA of the spray solution has proven to give increase suppression or control on certain species of weeds.

Weeds Controlled	Rate Per Acre (according to weed growth stage)					
	1/3 pints	2/3 pints	1 pints	1 1/8 pints	1 2/3 pints	2 – 3 1/4 pints
Bindweed, Field	-	-	-	-	-	actively growing
Bittercress	-	2-3"	-	-	-	-
Black Locust						actively growing
Buckeye species	-	-	-	-	full leaf	-
Bullnettle <sup>1</sup>	-	-	-	flower	-	-
Carrot, Wild						actively growing
Chickweed, Field						actively growing
, Mouseear						actively growing
Chicory	-	-	-	-	early bolting	-
Clover, Bur	-	-	Pre-flower	-	-	-
Clover						actively growing
Dandelion, Common	-	rosette	-	bolting	-	-
Dewberry, Southern	-	-	-	-	-	spring or fall
Dock, Curly	-	-	prior to bolting	-	after bolting	-
Elderberry <sup>1</sup>	-	-	-	-	-	actively growing
Goldenrod, Missouri	-	-	-	3-15"	flower	-
Groundsel, Texas	-	rosette	post-bolting	-	-	-
Honeysuckle, Hairy	-	-	-	-	spring or fall	-
Horsenettle, Carolina	-	-	-	-	-	flower or berry
Ironweed						actively growing
Ivy, Poison	-	-	-	after bloom	-	-
Knapweed, Black <sup>1</sup>	-	-	-	-	-	actively growing
, Russian <sup>1</sup>	-	-	-	-	-	actively growing
, Spotted	-	-	-	-	-	actively growing
Kudzu						actively growing
Marshelder	-	-	-	<12"	12"/prebloom	
Mesquite <sup>2</sup>	-	-	-	-	-	45-90 days after budbreak
Milkweed, Antelopehorn <sup>1</sup>	-	-	-	pre-flower	-	Flower
Nettle, Stinging						actively growing
Nightshade, Silverleaf	-	-	-	full flower	-	-
, Black	-	-	-	full flower	-	actively growing
Persimmon, Eastern <sup>2</sup>	-	-	-	-	-	actively growing
Plantain, Broadleaf						actively growing
, Buckhorn						actively growing
Poison Oak						actively growing
Prickly, Lettuce	-	-	-	rosette	-	actively growing
Rabbitbrush <sup>1</sup>	-	-	-	-	-	-
Ragwort, Tansy	-	-	-	rosette	-	actively growing
Redvine <sup>1</sup>	-	-	-	-	-	actively growing
Russian Olive						actively growing
Sagebrush, Fringed <sup>1</sup>	-	-	-	-	-	actively growing

Weeds Controlled	Rate Per Acre (according to weed growth stage)					
	1/3 pints	2/3 pints	1 pints	1 1/8 pints	1 2/3 pints	2 – 3 1/4 pints
Smartweed	-	-	-	-	-	-
Sorrel, Red	-	-	Rosette	bolting	flower	actively growing
Sowthistle <sup>1</sup>	-	-	-	-	-	actively growing
Spurge, Leafy <sup>1</sup>	-	-	-	-	-	full leaf
Tallow Tree, Chinese <sup>3</sup>	-	-	-	-	-	-
Teasel						actively growing
Thistle, Bull	-	-	Rosette	bolting	-	actively growing
, Canada <sup>1</sup>	-	-	-	-	-	-
, Musk	-	-	-	rosette/bolting	-	-
, Plumless	-	-	Rosette	bolting	-	-
Toadflax, Dalmatian						actively growing
Vetch, Hairy	-	1-4"	4-8"	8" full flower	-	-
Willow						actively growing
Yankee weed	-	-	-	10-18"	-	Rosette
Yarrow, Common						actively growing
Yellow Starthistle	-	-	-	-	-	-
Yucca						actively growing

<sup>1</sup> Specified rate will provide top growth suppression only.

<sup>2</sup> For improved root kill or woody species such as mesquite and eastern persimmon spray 2 pints of per acre **HM-1604 HERBICIDE** each year for 3 consecutive years.

<sup>3</sup> Under dense populations, a second application may be needed the following growing season.

For increased control of weeds such as blackberry and dewberry, **HM-1604 HERBICIDE** may be tank mixed with metsulfuron-methyl, if labeled for the use site.

### Ground Application (Banding)

Do not apply with a nozzle height greater than 4 feet above the crop canopy.

When applying **HM-1604 HERBICIDE** by banding, determine the amount of herbicide and water volume needed using the following formula:

$$\frac{\text{Bandwidth in inches}}{\text{Row width in inches}} \times \text{Broadcast rate per acre} = \text{Banding herbicide rate per acre}$$

$$\frac{\text{Bandwidth in inches}}{\text{Row width in inches}} \times \text{Broadcast rate volume per acre} = \text{Banding water volume per acre}$$

### Ground Application (Broadcast)

**Water volume:** Use 10-25 gallons of spray solution per broadcast acre for optimal performance. Use the higher spray volume when treating dense or tall vegetation.

**Application Equipment:** Select nozzle design to produce minimal amounts of fine spray particles. Spray nozzles as close to the weeds as is practical for good weed coverage.

### Spot or Small Area Application

**HM-1604 HERBICIDE** may be applied to individual clumps or small areas of undesirable vegetation using handgun or similar types of application equipment. Apply diluted sprays to allow complete wetting (up to runoff) of foliage and stems. For knapsack or other small capacity sprayers, prepare a solution of **HM-1604 HERBICIDE** in water according to Table 3 (assuming that the spot treatment rate equates to 40 gallons per acre on the broadcast basis.) Adding a surfactant (0.5% by volume) can help improve control.

Do not make spot treatments in addition to broadcast or band treatments.

Application equipment: Select nozzles designed to produce minimal amounts of fine spray particles. Spray with nozzles as close to the weeds as is practical for good weed coverage.

**Table 3. – Knapsack Sprayer Dilution Instructions**

<b>Sprayer Capacity (gallons of water)</b>	<b>Amount of HM-1604 HERBICIDE to add to the spray tank</b>
1 gallon	2/3 fluid ounce*
3 gallons	2 fluid ounces
5 gallons	3 fluid ounces

\* 1 fluid ounce = 2 tablespoons

### **ADDITIVES**

To improve burndown of emerged weeds, surfactants and/or low use rates of liquid fertilizers (28-0-0; 32-0-0), or crop oil concentrate may be used with **HM-1604 HERBICIDE** or **HM-1604 HERBICIDE** tank mixes applied after the weeds have emerged. Crop oil concentrate is for non-food/feed crop uses only. Do not apply tank mixes that include Ammonium Sulfate or Crop Oil Concentrate to any food/feed crop use listed on this label. For food/feed crop use, do not use liquid fertilizers that contain Ammonium Sulfate (AMS) as a source of nitrogen as tolerances in commodities derived from the crop may contain residues that exceed established tolerances.

#### **Oil Concentrate**

A crop oil concentrate must contain either a petroleum or vegetable oil base and must meet all of the following criteria:

- be non-phytotoxic
- provide good mixing quality in the jar test, and
- be successful in local experience

The exact composition of suitable products will vary; however, vegetable oil and petroleum oil concentrates should contain emulsifiers to provide good mixing quality. Highly refined vegetable oils have proven more satisfactory than unrefined vegetable oils. For additional information, see Compatibility Test for Mix Components.

Adjuvants containing crop oil concentrates may be used for preplant, pre-emergence and between cropping applications. Do not use crop oil concentrate for postemergence applications to food/feed crops (i.e. sorghum, grass (hay or silage), pastures, rangeland, and wheat.

#### **Nitrogen Source**

Sprayable liquid fertilizers: Use ½ GPA of sprayable liquid fertilizers (28-0-0; 32-0-0) per acre. Do not use brass or aluminum nozzles when spraying fertilizers.

#### **Non-ionic Surfactant**

The standard label rates are 2-4 pints of an 80% active non-ionic spray surfactant per 100 gallons of water. (Rate will vary with the size and condition of weeds to be controlled. Use lowest rate per 100 gallons when weeds are small and actively growing. As weeds increase in size and or become hardened off, the rate of non-ionic surfactant will have to be increased to give optimum coverage and control.)

**Table 4. Additive Rate Per Acre.**

Additive <sup>1</sup>	Rate Additive Per Acre
Non-ionic Surfactant	2-4 pints per 100 gallons <sup>2</sup>
Sprayable Liquid Fertilizers (28-0-0; 32-0-0)	½ GPA of spray solution
Crop Oil Concentrate	1 quart

<sup>1</sup> See manufacturer's label for specific rates.

<sup>2</sup> Use lowest rate per 100 gallons when weeds are small and actively growing. As weeds increase in size and or become hardened off, the rate of non-ionic surfactant will have to be increased to give optimum coverage and control.

### TANK MIXING INFORMATION

#### Tank Mix Partners/Components

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.

The following products may be tank mixed with **HM-1604 HERBICIDE** according to the specific tank mixing instructions in this label and respective product labels.

2,4-D <sup>1</sup>	diflufenzopyr	picloram
alachlor	diuron	pronamide
ametryn	fenoxaprop-p-ethyl	prosulfuron
asulam	glyphosate	quinclorac
atrazine	halosulfuron-methyl	terbacil
bentazon	metribuzin	thifensulfuron-methyl
carfentrazone-ethyl	metsulfuron-methyl	triasulfuron
clopyralid	MCPA	tribenuron-methyl
chlorsulfuron	paraquat	

\*When tank mixing with products that contain either 2,4-D or dicamba, do not exceed the annual per acre application rate for each active ingredient for that crop.

See "**Food/Feed Crop Specific Information**" section for more information for more details. Read and follow the applicable Restrictions and Limitations and Directions for Use on all products involved in tank mixing. Physical incompatibility, reduced weed control, or crop injury may result from mixing **HM-1604 HERBICIDE** with other pesticides (fungicides, herbicides, insecticides, or miticides), additives, or fertilizers. Therefore always determine compatibility before tank mixing this product with any other pesticide.

#### Compatibility Test for Mix Components

Before mixing components, always perform a compatibility jar test.

For 20 gallons per acre spray volume, use 3.3 cups (800 ml) of water. For other spray volumes adjust accordingly. Only use water from the intended source at the source temperature.

Add components in the sequence indicated in the Mixing Order using 2 teaspoons for each pound or 1 teaspoon for each pint of specified label rate per acre.

Always cap the jar and invert 10 cycles between component additions.

When the components have all been added to the jar, let the solution stand for 15 minutes. Evaluate the solution for uniformity and stability. The spray solution should not have free oil on the surface, nor fine particles that precipitate to the bottom, nor thick (clabbered) texture. If the spray solution is not compatible,

repeat the compatibility test with the addition of a suitable compatibility agent. If the solution is still incompatible, do not mix the ingredients in the same tank.

**Mixing Order:** If an inductor is used, rinse it thoroughly after each component has been added. Maintain constant agitation during application.

1. Water. Begin by agitating a thoroughly clean sprayer tank half full of clean water.
2. Agitation. Maintain constant agitation throughout mixing and application.
3. Products in PVA bags. Place any product contained in water-soluble bags into the mixing tank. Wait until all water-soluble PVA bags have fully dissolved and the product is evenly mixed in the spray tank before continuing.
4. Water-dispersible products (such as dry flowables, wettable powders, suspension concentrates, and suspo-emulsions)
5. Water-soluble products (such as **HM-1604 HERBICIDE**).
6. Emulsifiable concentrates (such as oil concentrate, when applicable).
7. Water-soluble additives (such as liquid fertilizers (28-0-0; 32-0-0), when applicable).\*
8. Remaining quantity of water.

\* If sprayable fluid fertilizer is used as the carrier.

Always perform the Compatibility Test before mixing into the spray tank. Also, when using a sprayable fluid fertilizer as the carrier, any product contained in PVA bags must first be completely dissolved in water before the contents can be added to the fertilizer mix.

#### PRECAUTIONS

- Arid (dry) conditions: it is extremely important that the addition of a suitable Nonionic Surfactant, Oil, or sprayable fertilizer be used when applying **HM-1604 HERBICIDE**. Higher rates of **HM-1604 HERBICIDE** may be needed to control susceptible weeds in this environment.
- Rainfast Period: Rainfall or irrigation occurring within 4 hours after postemergence applications may reduce effectiveness of **HM-1604 HERBICIDE**.
- Stress: Do not apply to crops under stress such as stress due to lack of moisture, hail damage, flooding, herbicide injury, mechanical injury, or widely fluctuating temperatures, as unsatisfactory control may result.

#### RESTRICTIONS

- Maximum seasonal use rate: Refer to Table 5.
- Do not make more than two applications per season regardless of individual application rates
- Preharvest Interval (PHI): Refer to "**Food/Feed Crop Specific Information**"
- Restricted Entry Interval (REI): 48 Hours
- Do not apply to crops that show injury (leaf phytotoxicity or plant stunting) produced by any other prior herbicide applications, because this injury may be enhanced or prolonged.
- Do not apply this product through any type of irrigation equipment. Do not contaminate irrigation ditches or water used for domestic purposes.
- 
- Crop Rotational Restrictions:

The interval between application and planting rotational crop is given below. Always exclude counting days when the ground is frozen. Moisture is essential for the degradation of this herbicide in soil.

Planting/replanting restrictions for **HM-1604 HERBICIDE** applications of 3 2/3 pints per acre or less: No rotational cropping restrictions apply at 120 days or more following application. Additionally, for annual crop uses in this label including sorghum, follow the preplant use directions under "VI. Food/Feed Crop Specific Information." For barley, oat, wheat, and other grass seedlings, the interval between application and planting is 10 days per 2/3 pint per acre.



Planting/replanting restrictions for applications of more than 3 2/3 pints and up to 4 3/4 pints of **HM-1604 HERBICIDE** per acre: Corn, sorghum, and all other crops grown in areas with 30" or more of annual rain have no rotational cropping restrictions 120 days or more after application. Barley, oat, wheat and other grass seedlings have no cropping restrictions, if the interval from application to planting is 10 days per 2/3 pint per acre east of the Mississippi River and 15 days per 2/3 pint per acre west of the Mississippi River. For all other crops in areas with less than 30" of annual rainfall, the interval between application and planting is 180 days or more.

Do not plant cotton for at least 30 days after application and after allowing for a minimum accumulation of 1" rainfall or overhead irrigation.

**Table 5. Crop Specific Restrictions and Limitations.**

Crop	Maximum Rate Per Acre Per Application	Maximum Rate Per Acre Per Season	Livestock Grazing or Feeding <sup>1</sup>	Aircraft Application
Between Crop Applications <sup>2</sup>	3 2/3 pints	4 3/4 pints	Yes	Yes
Pasture, Hay, Silage	3 1/4 pints	6 1/2 pints	Yes	Yes
Sorghum	2/3 pints	2/3 pints	Yes	Yes
Wheat	2 pints	4 pints	Yes	Yes

<sup>1</sup> Refer to "Food/Feed Crop Specific Information" for grazing and feeding restrictions.  
<sup>2</sup> Postharvest, Fallow, Crop Stubble and Set-Aside for broadleaf weed control. Refer to "Restrictions" for possible crop rotational restrictions.

**FOOD/FEED CROP SPECIFIC INFORMATION**

**PASTURES, RANGELAND AND GRASS (HAY, SILAGE)**

**HM-1604 HERBICIDE** is for use on pasture (including pasture grown for hay), rangeland, and grass grown for hay or silage, between crop applications/fallow systems, Conservation Reserve Programs, and general farmstead (non-cropland only).

Refer to Tables 1 and 2 for rate selection based on targeted weed or brush species. Some weed species will require tank mixes for adequate control.

For pasture renovations, wait 3 weeks per 1 1/4 pints of **HM-1604 HERBICIDE** used per acre before interseeding or injury may occur.

Uses described in this section also pertain to small grains (such as barley, corn, forage sorghum, oats, rye, sudangrass, or wheat) grown for pasture, hay, and silage only. Newly seeded areas including small grains grown for pasture or hay, may be injured if rates of **HM-1604 HERBICIDE** are greater than 1 1/4 pints per acre are applied in one application.

In newly established hybrid Bermudagrass, Pangolagrass, and stargrasses (*Cynodon* spp.) use 1 to 2 pints of **HM-1604 HERBICIDE** per acre to control or suppress weeds after planting vegetative propagules (stolons) of hybrid bermudagrasses. In addition to the weeds listed in Tables 1 and 2, this rate of **HM-1604 HERBICIDE** will control or suppress annual sedges, broadleaf signalgrass, crabgrass, and goosegrass. Best results will be obtained if **HM-1604 HERBICIDE** is applied at the germinating stage of weeds. Under favorable conditions, this is usually 7-10 days after planting these grasses. Reduced control can be expected if weeds are allowed to reach 1" in height before application or if germination of weeds occurs 10 days after application.

Use on bentgrass, susceptible grass pastures (such as carpetgrass, buffalograss, or St. Augustine grass), lespedeza, wild winter peas, vetch, clover, and alfalfa pastures may result in some degree of plant injury.

When perennial weeds are reaching maturity, mowing and allowing some regrowth will enhance control.

### Pasture and Rangeland Tank Mixes

It is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions and precautionary language of the products in the mixture.

**HM-1604 HERBICIDE** may be applied in tank mixes with one or more of the following herbicides:

2,4-D*	Dicamba	Dicamba DMA*
Metsulfuron-methyl	Triasulfuron	

\*When tank mixing with products that contain either 2,4-D or dicamba, do not exceed the annual per acre application rate for each active ingredient for that crop.

### PASTURE & RANGELAND RESTRICTIONS:

- Do not make more than 2 applications per year.
- Do not exceed a total of 6 1/2 pints (0.81 lb a.e dicamba and 1.87 lb a.e. 2,4-D) of **HM-1604 HERBICIDE** per treated acre during a growing season.
- Minimum spray interval between applications is 30 days.
- Rates above 2 1/2 pints of **HM-1604 HERBICIDE** per acre are for spot treatments only.
- If grasses are grown for seed or for seed-down purposes, do not apply after grass reaches joint stage.
- **Pre-Harvest Interval (PHI):** 7 days
- **Grazing and Feeding Non-Lactating Animals:** Do not graze non-lactating animals within 7 days of treatment. Do not permit meat animals being finished for slaughter to graze treated fields within 30 days of slaughter.
- **Grazing and Feeding Lactating Animals:** Do not graze lactating dairy animals within 7 days of treatment.
- **Dry hay and Silage:** Treated grasses may be harvested for dry hay or silage but do not harvest within 37 days of treatment.
- If grass is to be cut for hay, Agricultural Use requirements for the Worker Protection Standard are applicable.

**HM-1604 HERBICIDE** contains 0.125 pounds a.e. of dicamba per pint. When tank mixing with products that contain dicamba, do not exceed a combined total of 1.0 pound of a.e. per acre per application.

**HM-1604 HERBICIDE** contains 0.29 pounds a.e. of 2,4-D per pint. When tank mixing with products that contain 2,4-D, do not exceed a combined total of 4.0 pounds of a.e. per acre per year.

## SORGHUM

### Rates and Timings

Apply 2/3 pint of **HM-1604 HERBICIDE** per acre to sorghum in the 3-5 leaf stage (4"-8" tall.) For best performance apply when weeds are small (less than 3" tall).

Applications of **HM-1604 HERBICIDE** to sorghum during periods of rapid growth may result in temporary leaning of plants or rolling leaves. These effects are usually outgrown within 10-14 days. Sorghum growing under conditions of stress such as high moisture, low fertility, and abnormal temperature may be more sensitive to applications of **HM-1604 HERBICIDE**. Do not use surfactants or oils with postemergence applications of **HM-1604 HERBICIDE** on sorghum crops. Do not use **HM-1604 HERBICIDE** if the potential for sorghum injury is not acceptable.

If sorghum is grown for pasture, hay or silage, refer to "**Pastures, Rangeland and Grass (Hay, Silage)**" under "**Food/Feed Crop Specific Information**" for livestock grazing and feeding restrictions.

**Sorghum Tank Mixes:**

It is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions and precautionary language of the products in the mixture.

**HM-1604 HERBICIDE™** may be applied in tank mixes with one or more of the following herbicides:

Atrazine	Bentazon	Bromoxynil
Halosulfuron-methyl	Prosulfuron	Quinclorac

**SORGHUM RESTRICTIONS:**

- Do not graze or feed treated sorghum forage or silage prior to mature grain stage.
- Make no more than one postemergence application per growing season.
- Do not permit meat or dairy animals to consume treated crop as fodder or forage for 30 days following application.
- Do not apply **HM-1604 HERBICIDE** to sorghum grown for seed production.
- Pre-Harvest interval is 30 days.

**HM-1604 HERBICIDE** contains 0.125 pounds a.e. of dicamba per pint. When tank mixing with products that contain dicamba, do not exceed a combined total of 1.0 pound of a.e. per acre per application.

**HM-1604 HERBICIDE** contains 0.29 pounds a.e. of 2,4-D per pint. When tank mixing with products that contain 2,4-D ester, do not exceed a combined total of 0.5 pounds a.e. per acre per year.

**WHEAT  
(Fall and Spring-seeded)**

If small grains are grown for pasture or hay only, refer to Pastures, Rangeland and Grass (Hay, Silage).

**Early Season Application:**

Apply up to 2 pints of **HM-1604 HERBICIDE** per acre to wheat unless using one of the wheat specific programs below.

Early season applications to spring-seeded wheat must be made after tillering and before wheat reaches the 6-leaf stage.

Early season applications to fall-seeded wheat must be made after tillering and prior to the jointing stage.

Take care in staging early developing wheat varieties such as TAM 107, Madison, or Wakefield to be certain that the application occurs prior to the jointing stage.

**Specific Use Programs for Fall-Seeded Wheat Only:**

Up to 3/4 pints of **HM-1604 HERBICIDE** per acre may be applied on fall-seeded wheat after the wheat begins to tiller for suppression of perennial weeds, such as field bindweed. Make applications in the fall following a frost but before a killing freeze. Periods of extended stress such as cold and wet weather may enhance the possibility of crop injury. For fall applications only, do not use if the potential for crop injury is not acceptable.

**Preharvest Applications:**

**HM-1604 HERBICIDE** can be used to control listed weeds that may interfere with harvest of wheat. Apply up to 1 1/4 pints of **HM-1604 HERBICIDE** per acre as a broadcast or spot treatment to annual broadleaf weeds when wheat is in the hard dough stage and the green color is gone from the nodes (joints) of the

stem. Best results will be obtained if application can be made when weeds are actively growing but before weeds canopy. A waiting interval of 14 days is required before harvest. Do not use preharvest-treated wheat for seed unless a germination test is performed on the seed with an acceptable result of 95% germination or better. For control of additional broadleaf weeds or grasses, **HM-1604 HERBICIDE** may be tank mixed with other herbicides such as metsulfuron-methyl or glyphosate that are registered for preharvest use in wheat.

**WHEAT RESTRICTIONS:**

- Do not use **HM-1604 HERBICIDE** in wheat underseeded with legumes.
- Postemergence:
  - Make no more than one application per crop cycle
  - Do not apply more than 2 pints (0.25 lb a.e dicamba and 0.58 lb a.e. 2,4-D) per acre per application.
- Preharvest:
  - Make no more than one application per crop cycle.
  - Do not apply more than 1 ¼ pints (0.16 lb a.e dicamba and 0.36 lb a.e. 2,4-D) per acre per application.
- Pre-Harvest interval is 14 days.
- Feeding and Grazing Restrictions for Wheat:
  - Do not graze or feed animals within 7 days of treatment.
  - Do not graze or harvest for livestock feed prior to crop maturity.
- Preharvest use of **HM-1604 HERBICIDE** is not registered for use in California.

**HM-1604 HERBICIDE** contains 0.125 pounds a.e. of dicamba per pint. When tank mixing with products that contain dicamba, do not exceed a combined total of 1.0 pound of a.e. per acre per application. Do not exceed a combined total of 2.0 pounds of a. e. of dicamba per acre per year

**HM-1604 HERBICIDE** contains 0.29 pounds a.e. of 2, 4-D per pint. When tank mixing with products that contain 2,4-D, do not exceed a combined total of 1.25 pounds a.e. per acre crop cycle of 2,4-D for post emergent use. Do not exceed 0.5 pounds of a.e. per acre per crop cycle of 2,4-D for pre-harvest application. Do not exceed a total of 1.75 pounds of a.e. per acre per crop cycle for all uses.

**Wheat Tank Mixes:**

It is the pesticide user’s responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions and precautionary language of the products in the mixture.

**Table 6 – Wheat Tank Mix Partners**

2,4-D <sup>4</sup>	diuron <sup>3</sup>	prosulfuron <sup>1</sup>
bromoxynil	fenoxaprop-p-ethyl <sup>2</sup>	thifensulfuron-methyl <sup>1</sup>
carfentrazone-ethyl	metribuzin <sup>3</sup>	tribenuron-methyl <sup>1</sup>
chlorsulfuron <sup>1</sup>	MCPA <sup>2</sup>	triasulfuron <sup>1</sup>
clopyralid	metsulfuron-methyl <sup>1</sup>	

<sup>1</sup> Do not use low rates of sulfonyleurea herbicide, such as chlorsulfuron, metsulfuron-methyl, prosulfuron, thifensulfuron-methyl, tribenuron-methyl and triasulfuron on more mature weeds or on dense vegetative growth.

<sup>2</sup> Do not use as a tank mix treatment with 2,4-D, dicamba, fenoxaprop-p-ethyl or MCPA on Durum wheat. Do not tank mix with 2,4-D, fenoxaprop-p-ethyl or MCPA if wild oat is the larger weed.

<sup>3</sup> Tank mixes with diuron and metribuzin are for use in fall-seeded wheat only.

<sup>4</sup> HM-1604 HERBICIDE contains 0.29 pounds acid equivalent of 2,4-D per pint. When tank mixing with 2,4-D do not exceed a combined total of 0.5 pound acid equivalent per acre of 2,4-D.

**Between Crop Applications/Fallow Systems, Conservation Reserve Programs, and General Farmstead**

These uses are considered Food/Feed Crops when harvested, grazed or foraged. Consult section on “Tank Mixing Information” for adjuvant restrictions and section on “Additives” for specific use directions.

## NON-FOOD/FEED USE (LAND NOT HARVESTED, GRAZED OR FORAGED)-SPECIFIC INFORMATION.

### BETWEEN CROP APPLICATIONS

#### Preplant Directions (Postharvest, Fallow, Crop Stubble, Set-Aside) For Broadleaf Weed Control

**HM-1604 HERBICIDE** can be applied postharvest in the fall, spring, or summer during the fallow period or to crop stubble/set-aside acres. Apply to weeds after crop harvest (postharvest) and before a killing frost or in the fallow cropland or crop stubble the following spring or summer.

See "**Restrictions and Limitations**" for the specified interval between application and planting to prevent crop injury.

#### Rates and Timings:

Apply 1 – 3 2/3 pints of **HM-1604 HERBICIDE** per acre. Refer to Table 1 to determine use rates for specific targeted weed species. Retreatments may be made as needed; however, do not exceed a total of 4 3/4 pints of **HM-1604 HERBICIDE** per treated acre during a growing season. For best performance, apply **HM-1604 HERBICIDE** when annual weeds are less than 6" tall, when biennial weeds are in the rosette stage and to perennial weed regrowth in late summer or fall following a mowing or tillage treatment. The most effective control of upright perennial broadleaf weeds such as Canada thistle and Jerusalem artichoke occurs if **HM-1604 HERBICIDE** is applied when the majority of weeds have at least 4-6" of regrowth or for weeds such as field bindweed and hedge bindweed that are in or beyond the full bloom stage. The addition of liquid fertilizers (28-0-0, 32-0-0) at ½ GPA has shown to increase efficacy.

Do not disturb treated areas following application. Treatments may not kill weeds that develop from seed or underground plant parts such as rhizomes or bulblets, after the effective period for **HM-1604 HERBICIDE**. For seedling control, a follow-up program or other cultural practices could be instituted.

#### Between Crop Tank Mixes:

It is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions and precautionary language of the products in the mixture.

In tank mixes with one or more of the following herbicides, apply 1.0 - 1.25 pints of **HM-1604 HERBICIDE** per acre for control of annual weeds, or 1.25 - 4.25 pints of **HM-1604 HERBICIDE** per acre for control of biennial and perennial weeds

2,4-D*	Dicamba*	Paraquat
Atrazine	Diflufenzopyr	Picloram
Carfentrazone-ethyl	Glyphosate	Pronamide
Chlorsulfuron	Metribuzin	Quinclorac
Clopyralid	Metsulfuron-methyl	Triasulfuron

\*When tank mixing with products that contain 2,4-D or dicamba, do not exceed the annual per acre application rate for each active ingredient for that crop.

#### **BETWEEN CROP APPLICATION RESTRICTIONS:**

- Plant only labeled crops within 29 days following application.
- Limited to 2 applications per year.
- Minimum of 30 days between applications.

**HM-1604 HERBICIDE** contains 0.125 pounds a.e. of dicamba per pint. When tank mixing with products that contain dicamba, do not exceed a combined total of 1.0 pound of a.e. per acre per application.

**HM-1604 HERBICIDE** contains 0.29 pounds a.e. of 2,4-D per pint. When tank mixing with products that contain 2,4-D, do not exceed a combined total of 2.0 pounds of a.e. per acre per year.

## APPLICATIONS TO FALLOW GROUND PRIOR TO PLANTING COTTON

### Rates and Timings

Apply **HM-1604 HERBICIDE** as a broadcast or spot treatment to emerged and actively growing weeds at the rate of 1 to 3 2/3 pints per acre. The most effective control of weeds occurs if application is made when weeds are in the 2-4 leaf stage and rosettes are less than 2" across

### Cropping Restrictions

Do not plant cotton for at least 30 days after application and after allowing for a minimum accumulation of 1" rainfall or overhead irrigation. Do not apply west of the Rockies or to geographic areas with average annual rainfall less than 25".

### Tank Mix Treatments:

It is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions and precautionary language of the products in the mixture.

For control of grasses or additional broadleaf weeds, **HM-1604 HERBICIDE** may be tank mixed with prometryn, paraquat, and glyphosate herbicides.

## FOREST MANAGEMENT

### Forest Site Preparation

**Budbreak Spray:** For control of alder, susceptible broadleaf weeds, and susceptible woody plants before planting forest seedlings, apply up to 2 quarts per acre in a minimum of 10 gallons spray mixture per acre. Apply as an oil spray (see "**Mixing Instructions**") after alder buds break, but before foliage is 1/4 full size. A water spray including 2 to 4 quarts per acre of diesel oil, fuel oil, stove oil, or crop oil concentrate may also be used.

**Foliage Spray:** To control alder and susceptible woody plants before planting forest seedlings, apply up to 4 pints per acre in a minimum of 10 gallons spray mixture per acre. If desired, apply as a water spray including up to 1 quart of diesel oil, fuel oil, stove oil, or crop oil concentrate per gallon of water (see "**Mixing Instructions**"). For best results, apply after alder foliage has reached full size.

**Conifer Release:** Some Conifers are more susceptible to HM-1604 HERBICIDE than others. To control alder, susceptible broadleaf weeds, and susceptible woody plants in young conifer stands, apply up to 2 pints per acre in a minimum of 10 gallons spray mixture per acre. Apply this spring foliage treatment as a water spray when 3/4 of the brush foliage has full size leaves and before new conifer growth reaches 2 inches in length. Such stages usually occur between early May and mid-June, but base application timing on growth stages of brush and conifers. Application may cause leader deformation and other conifer injury, but trees should overcome it during the next growing season.

To control tanoak, madrone, ceanothus, canyon live oak, and manzanita, and to release Douglas fir, hemlock, Sitka spruce or grand fir, apply up to 3 pints per acre in a minimum of 10 gallons spray mixture per acre. Apply this spring foliage treatment as a water spray including, if desired, up to 1 quart of diesel oil, fuel oil, stove oil, or crop oil concentrate per gallon of water (see "**Mixing Instructions**"). Make application before new growth on Douglas fir is 2 inches long. To release ponderosa pine from the same species, treat before new pine growth begins in the spring. Addition of oil or oil concentrate may cause unacceptable injury to pines. For dormant applications in late winter or early spring for control of susceptible woody species such

as alder, willow, poplars, cherry, vine maple, ceanothus, tanoak, madrone, and manzanita, apply up to 3 pints per acre in a minimum of 10 gallons spray mixture (with diesel oil, etc.) per acre. Apply this dormant treatment in diesel oil, fuel oil, stove oil, or other suitable diluent such as water plus crop oil concentrate (see "Mixing Instructions"). Do not use in plantations where pine and larch are among the desired crop species.

To control hazel dodder (*Cuscuta coryli*) in the Lake states, apply up to 2 pints per acre in a minimum of 10 gallons spray mixture per acre. Apply as a water spray when new shoot growth of hazel is complete (usually mid-July).

After conifer species such as white pine, ponderosa pine, jack pine, red pine, black spruce, white spruce, red spruce, and balsam fir cease growth and harden off and brush is still actively growing in late summer, apply up to 3 pints per acre in a minimum of 10 gallons water spray mixture per acre. Apply as a water spray to control certain competing hardwoods such as alder, aspen, birch, hazel and willow. However, if possible injury cannot be tolerated, do not use since this treatment may cause conifer injury.

**Forest Roadsides:** To control susceptible broadleaf weeds and woody plants on forest roadsides, apply 1 to 3 pints per acre in a minimum of 10 gallons water spray mixture per acre. Apply as a water spray and, if necessary to ensure penetration of foliage, include up to 3 quarts per acre of diesel oil, fuel oil, stove oil, or crop oil concentrate (see "Mixing Instructions").

#### **FOREST MANAGEMENT RESTRICTIONS:**

- Do not apply under drip line of desirable trees or adjacent to desirable vegetation.
- Maximum: 1 application per year.
- Do not apply more than 1 gallon of product per acre per year

**HM-1604 HERBICIDE** contains 0.125 pounds a.e. of dicamba per pint. When tank mixing with products that contain dicamba, do not exceed a combined total of 1.0 pound of a.e. per acre per application.

**HM-1604 HERBICIDE** contains 0.29 pounds a.e. of 2,4-D per pint. When tank mixing with products that contain 2,4-D, do not exceed a combined total of 2.0 pounds of a.e. per acre per year.

#### **ROADSIDES; MEDIANS; HIGHWAY, RAILROAD, UTILITY AND PIPELINE RIGHTS-OF-WAY; VACANT LOTS; AROUND UTILITY INSTALLATIONS, TRANSFORMERS, PUMP HOUSES, AND BUILDINGS; STORAGE AREAS; FENCES; GUARDRAILS; LUMBER YARDS; INDUSTRIAL SITES; AIRPORTS; TANK FARMS; FARMSTEADS; AND SIMILAR NONCROP AREAS**

For control of listed broadleaf weeds and small woody plants, apply 2/3 to 2 pints per acre diluted in 10 gallons of water. Use the high rate for woody plants. Applications may be as broadcast sprays, small area sprays or spot treatments. For small areas or spot spraying, use 2 fluid ounces per gallon of water and spray weeds to runoff. Regardless of the method of application, use adequate spray volume for full coverage of weeds. Application timing is in the early spring when sufficient weeds have emerged, and when weeds are small and actively growing, but before weeds exceed size limits described in weed tables. Summer applications to older, drought-stressed weeds are less effective. However, listed weeds are more susceptible again in the fall when cooler, wetter conditions support active growth before a killing frost. For fall treatment of mature weeds or perennial weed regrowth, use up to 1.0 pints per acre diluted in 10 gallons of water. Several seasons of spring plus fall treatments may be necessary to control certain listed perennials. Use of oil sprays or the addition of spray adjuvants improves weed control, but also increases the risk of damage to desirable ground covers.

#### **Precautions:**

**Plant Response:** Bent grass, other warm season or southern grasses, alfalfa, clover, or other legumes may be killed or injured.

### **NONCROP USE RESTRICTIONS:**

- Do not apply under drip line of desirable trees or adjacent to desirable vegetation.
- Do not apply when grass is in boot to milk stage, or after heading begins, if grass production is desired.
- Do not reseed for at least 30 days following last application.
- Do not apply to newly seeded areas until grass is well established.

**HM-1604 HERBICIDE** contains 0.125 pounds a.e. of dicamba per pint. When tank mixing with products that contain dicamba, do not exceed a combined total of 1.0 pound of a.e. per acre per application.

**HM-1604 HERBICIDE** contains 0.29 pounds a.e. of 2,4-D per pint. When tank mixing with products that contain 2,4-D, do not exceed a combined total of 2.0 pounds of a.e. per acre per year.

### **CONSERVATION RESERVE PROGRAMS AND GENERAL FARMSTEAD**

**HM-1604 HERBICIDE** is for use for Conservation Reserve Programs, general farmstead (non-cropland only), weed and brush control, or use in State Recognized Noxious Weed areas (non-cropland areas).

Refer to Tables 1 and 2 for rate selection based on targeted weed or brush species. Some weed species will require tank mixes for adequate control.

It is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions and precautionary language of the products in the mixture.

### **RESTRICTIONS:**

- Do not make more than 2 applications per year. Minimum of 30 days between applications.
- Rates above 2 1/2 pints of **HM-1604 HERBICIDE** per acre are for spot treatments only.
- Retreatments may be made as needed; however, do not exceed a total of 4 3/4 pints of **HM-1604 HERBICIDE** per treated acre during a growing season.

**HM-1604 HERBICIDE** contains 0.125 pounds a.e. of dicamba per pint. When tank mixing with products that contain dicamba, do not exceed a combined total of 1.0 pound of a.e. per acre per application.

**HM-1604 HERBICIDE** contains 0.29 pounds a.e. of 2,4-D per pint. When tank mixing with products that contain 2,4-D, do not exceed a combined total of 2.0 pounds of a.e. per acre per year.

### **FARMSTEAD AND FENCE-ROW TREATMENT APPLICATION INSTRUCTIONS**

**HM-1604 HERBICIDE** may be applied using water or oil and water emulsions in spot application to control undesirable vegetation using handgun or similar types of application equipment. In addition to weed species listed in Tables 1 and 2, these treatments may be used to control or suppress woody plant species listed in Table 7.

To prepare soil and water emulsions, mix in the order and proportions indicated below.

1. Water: Begin by agitating a thoroughly clean sprayer tank with the desired quantity of clean water. Maintain constant agitation during complete mixing procedure.
2. Emulsifier: Add 0.5% volume to volume of water.
3. **HM-1604 HERBICIDE**: add 1.5 gallons per 100 gallons of total intended solution.
4. Diesel Oil: Add 10 gallons per 100 gallons of total intended solution.

One gallon of **HM-1604 HERBICIDE** in forty gallons of spray solution contains 1.0 pounds acid equivalent of dicamba and 2.3 pounds acid equivalent of 2,4-D. Spray plants to wet.



The solution should remain milky colored without an oily layer on top when under agitation. If an oily layer forms, increase the amount of emulsifier or change to a more effective emulsifier.

To control listed brush, briars, and weeds along fence-rows surrounding pasture and ranch lands, and fallow fields, use a tank mix of 1.5% **HM-1604 HERBICIDE**, 88.5% water, 10% diesel oil, and sufficient emulsifier (to mix the diesel and emulsifier). The diesel oil in this tank mix will damage or kill desirable grasses, do not use in pastures or where damage to desirable species cannot be tolerated.

Maintain constant agitation during application. Under good agitation, the spray solution should be milky white with no oil layer on top. If oil layer forms, increase the amount of emulsifier or change to a more effective emulsifier.

#### **FOR SPRAYING FOLIAR APPLICATIONS:**

1. Spray when leaves have reached full size but have not hardened due to drought or maturity.
2. Spray individual plants to wet with handgun.
3. For larger stems (up to 3" in diameter) and hard to control species, direct spray stream to base of stems to wet the stem at soil surface in addition to wetting the foliage.
4. Do not apply under drip line of desirable trees or adjacent to desirable vegetation.

#### **FOR DORMANT BASAL APPLICATIONS:**

1. Increase diesel oil content to 15% or 15 gallons of diesel oil per 100 gallons of total solution.
2. Spray in late winter and early spring before plants break dormancy.
3. Spray the bottom 24" of the target stem to wet on all sides.
4. For larger stems (up to 3" in diameter) and hard to kill species direct the spray solution to the base of target stems to wet the soil at the stem/soil junction in addition to wetting the stem.

#### **FOR CUT SURFACE TREATMENTS:**

Apply **HM-1604 HERBICIDE** in an undiluted state as a cut surface treatment to control unwanted trees and prevent sprouts of cut trees.

- Frill or Girdle Treatments: Make a continuous cut or a series of overlapping cuts using an axe to girdle tree trunk. Spray or paint the cut surface with **HM-1604 HERBICIDE**.
- Stump Treatments: Spray or paint freshly cut surface with **HM-1604 HERBICIDE**. Thoroughly wet the cambium layer (the area adjacent to the bark). Treat stumps within 6 hours after cutting.
- Basal spray, Cut Surface (stumps and frill): Limit of one basal spray or cut surface application per year. Maximum of 8.0 lbs of 2,4-D a.e. per 100 gallons of spray solution.

Table 7. The following list of trees and vines can be controlled on farmsteads and fencerows as foliar, basal, or cut surface treatments:

Alder	Hemlock	Poplar
Ash	Hickory	Rabbitbrush
Aspen	Honeylocust	Redcedar, Eastern
Basswood	Honeysuckle	Rose, McCartney
Beech	Hornbeam	Rose, Multiflora
Blackberry	Huckleberry	Sagebrush, Fringe
Blackgum	Huisache	Sassafras
Cedar	Ivy, Poison	Spruce
Cherry	Kudzu	Sumac
Chinquapin	Locust, Black	Sweetgum
Cottonwood	Maple	Sycamore
Creosotebush	Mesquite	Tarbrush
Dewberry	Oak	Willow
Dogwood	Oak, Poison	Witchhazel
Elm	Olive, Russian	Yaupon
Grape	Persimmon, Eastern	Yucca
Greenbriar	Pine	
Hawthorn (Thornapple)	Plum, Sand (Wild Plum)	

## **RESTRICTIONS:**

- Do not exceed 40 gallons of spray solution per treated acre per application.
- Do not allow this spray mix to contact desirable vegetation.
- Do not apply under drip line of desirable trees or adjacent to desirable vegetation.

**HM-1604 HERBICIDE** contains 0.125 pounds a.e. of dicamba per pint. When tank mixing with products that contain dicamba, do not exceed a combined total of 1.0 pound of a.e. per acre per application.

**HM-1604 HERBICIDE** contains 0.29 pounds a.e. of 2,4-D per pint. When tank mixing with products that contain 2,4-D, do not exceed a combined total of 2.0 pounds of a.e. per acre per year.

## **SOD FARMS**

For best results, do not mow turf 1 to 2 days before or after application. Delay turf watering until the day after application. Do not apply to newly seeded areas until grass is well established and has been mowed several times. A period of about 30 days after application is usually a sufficient interval before reseeding. Seeding a small area and observing response is recommended before large scale seeding.

## **COOL SEASON GRASSES:**

To control listed emerged broadleaf weeds in cool season turfgrasses such as tall fescue, bluegrass, or perennial ryegrass, apply 1.0 - 4.0 pints per acre. Apply when weeds are small and actively growing under good moisture conditions.

Use sufficient spray solution for thorough and uniform coverage, and no less than 2 gallons per acre.

## **COOL SEASON GRASS RESTRICTIONS:**

- Do not use on creeping grasses such as bentgrass except as a spot treatment.
- Do not use on dichondra or other herbaceous ground covers. Legumes may be damaged or killed.
- Reseeding: Delay reseeding at least 30 days following application. With spring application, reseed in the fall and with fall application, reseed in the spring.
- Do not use on carpetgrass, bentgrass, or Dichondra turf, or where desirable clovers are present.

## **WARM SEASON GRASSES:**

To control many broadleaf weeds in warm season turfgrasses such as common bermudagrass, hybrid bermudagrass, bahiagrass, zoysiagrass, buffalograss, centipedegrass, seashore paspalum, or kikuyugrass, apply up to 1.5 pints per acre. Apply when weeds are small and actively growing under moist conditions.

To control many broadleaf weeds in common St. Augustine, apply up to 1.5 pints per acre. Apply when weeds are small and actively growing under moist conditions.

## **St. Augustine Precautions:**

- If dry conditions exist, irrigate 8 hours before and 8 hours after application.
- Over application of this product can cause turf injury (discoloration, turf thinning, stunting and even turf death).
- To avoid turf injury, use only on turfgrass that is reasonably free of stress from diseases, insects, excess heat or cold, drought or excess rainfall/irrigation, shaded areas, low soil pH, nematodes, improper mowing or improper applications of fertilizer and pesticides. Injury can occur if this product is applied under any of these or other stress conditions. Under any of these stress conditions, any turf damage caused by the use of this product is beyond the control of Helena Agri-Enterprises, LLC and all risk is assumed by the buyer and/or user.
- If any discoloration is objectionable or any level of phytotoxicity, then do not add surfactant or adjuvants to HM-1604 HERBICIDE.

### **WARM SEASON PRECAUTIONS:**

- Do not use tank mixture combinations; unless your experience indicates that the tank mixture will not result in turf injury.

### **WARM SEASON RESTRICTIONS:**

- Do not apply **HM-1604 HERBICIDE** to 'Floritam', 'Bitterblue' and other improved varieties of St. Augustinegrass.
- Do not mow 2 days before and until 2 days after the application of this product.
- Do not broadcast or spot apply **HM-1604 HERBICIDE** to St. Augustinegrass during spring green-up, which is the transition period between dormancy and active growth.
- Do not broadcast or spot apply **HM-1604 HERBICIDE** to St. Augustinegrass during the fall to winter transition or if temperatures are expected to drop below 40°F within ten (10) days of application
- Do not broadcast apply **HM-1604 HERBICIDE** when ambient temperatures are below 50°F or above 85°F; some injury may be expected with spot treatments when air temperatures exceed 85°F.

### **SOD FARM RESTRICTIONS (Warm and Cool Season Use):**

- Do not make more than 2 applications per year (excluding spot treatments).
- Do not apply more than 4 pints (0.5 lb a.e dicamba and 1.15 lb a.e. 2,4-D) product per acre per application on cool season grass varieties..
- Do not apply more than 1.5 pints (0.19 lb a.e dicamba and 0.43 lb a.e. 2,4-D) product per acre per application on warm season grass varieties.
- Minimum spray interval between broadcast applications is 21 days.

**HM-1604 HERBICIDE** contains 0.125 pounds a.e. of dicamba per pint. When tank mixing with products that contain dicamba, do not exceed a combined total of 1.0 pound of a.e. per acre per application or a total of 2.0 pounds of a.e. per acre per year..

**HM-1604 HERBICIDE** contains 0.29 pounds a.e. of 2,4-D per pint. When tank mixing with products that contain 2,4-D, do not exceed a combined total of 4.0 pounds of a.e. per acre per year.

## **ORNAMENTAL AND RECREATIONAL TURFGRASSES, LAWNS, GOLF COURSES (Fairways, Aprons, Tees, and Roughs), PARKS AND CEMETERIES**

Refer to "Turf Use Requirements" in the "Non-Agricultural Use Requirements" section. For best results, do not mow turf 1 to 2 days before or after application. Delay turf watering for at least 1 hour after application. Product in contact with desirable trees, shrubs, flowers or vegetables since plant injury may result. Do not apply to newly seeded areas until grass is well established and has been mowed several times. A period of about 30 days after application is usually a sufficient interval before reseeding grasses (or other plants). Seeding a small area and observing response is recommended before large scale seeding.

### **COOL SEASON GRASSES:**

To control listed emerged broadleaf weeds in cool season turfgrasses such as tall fescue, bluegrass, or perennial ryegrass, apply 2.0 - 3.0 pints per acre (0.75 to 1.0 fluid ounces per 1,000 square feet). Application timing for broadcast treatment is in the early spring when small weeds have emerged and are actively growing under good moisture conditions. For very weedy turf, a follow-up broadcast or spot application may be needed from 2 to 4 weeks later. Summer applications are typically spot treatments of individual weeds that have emerged after a spring broadcast treatment. In the fall when cooler, wetter conditions favor active weed growth, broadcast application may be appropriate for very weedy turf, such as an area that had no spring broadcast treatment.

### **WARM SEASON GRASSES:**

To control listed broadleaf weeds in warm season turfgrasses such as common bermudagrass, hybrid bermudagrass, bahiagrass, zoysiagrass, buffalograss, centipedegrass, seashore paspalum, or kikuyugrass, apply up to 1.5 pints per acre. Apply when weeds are small and actively growing under moist conditions.

Do not use where desirable clovers are present.

To control listed broadleaf weeds in common St. Augustine, apply up to 1.5 pints per acre. Apply when weeds are small and actively growing under moist conditions.

**St. Augustine Precautions:**

- If dry conditions exist, irrigate 8 hours before and 8 hours after application.
- Over application of this product can cause turf injury (discoloration, turf thinning, stunting and even turf death).
- Do not use tank mixture combinations; unless your experience indicates that the tank mixture will not result in turf injury.
- To avoid turf injury, use only on turfgrass that is reasonably free of stress from diseases, insects, excess heat or cold, drought or excess rainfall/irrigation, shaded areas, low soil pH, nematodes, improper mowing or improper applications of fertilizer and pesticides. Injury can occur if this product is applied under any of these or other stress conditions. Under any of these stress conditions, any turf damage caused by the use of this product is beyond the control of Helena Agri-Enterprises, LLC and to the extent consistent with applicable law all risk is assumed by the buyer and/or user.

**St. Augustine RESTRICTIONS:**

- Do not apply **HM-1604 HERBICIDE** to ‘Floratam’, ‘Bitterblue’ and other improved varieties of St. Augustinegrass.
- Do not mow 2 days before and until 2 days after the application of this product.
- Do not broadcast or spot apply **HM-1604 HERBICIDE** to St. Augustinegrass during spring green-up, which is the transition period between dormancy and active growth.
- Do not broadcast or spot apply **HM-1604 HERBICIDE** to St. Augustinegrass during the fall to winter transition or if temperatures are expected to drop below 40°F within ten (10) days of application
- Do not broadcast apply **HM-1604 HERBICIDE** when ambient temperatures are below 50°F or above 85°F; some injury may be expected with spot treatments when air temperatures exceed 85°F.

**ORNAMENTAL TURFGRASS RESTRICTIONS:**

- Do not apply more than 4 pints (0.5 lb a.e dicamba and 1.15 lb a.e. 2,4-D) product per acre per application on cool season grass varieties.
- Do not apply more than 1.5 pints (0.19 lb a.e dicamba and 0.43 lb a.e. 2,4-D) product per acre per application on warm season grass varieties.
- Do not make more than 2 applications per year on cool and warm season grasses.
- Minimum spray interval between broadcast applications is 30 days.

**HM-1604 HERBICIDE** contains 0.125 pounds a.e. of dicamba per pint. When tank mixing with products that contain dicamba, do not exceed a combined total of 1.0 pound of a.e. per acre per application or a total of 2.0 pounds of a.e. per acre per year..

**HM-1604 HERBICIDE** contains 0.29 pounds a.e. of 2,4-D per pint. When tank mixing with products that contain 2,4-D, do not exceed a combined total of 4.0 pounds of a.e. per acre per year.

Weeds listed in this label:

Common Name	Scientific Name
ANNUALS	
Amaranth, Palmer	<i>Amaranthus palmeri</i>
, Powell	<i>Amaranthus powellii</i>
, Spiny	<i>Amaranthus spinosus</i>
Beebalm, Spotted	<i>Monarda punctata</i>
Black Medic	<i>Medicago lupulina</i>
Broomweed, Common	<i>Gutierrezia dracunculoides</i>
Buckwheat, Wild	<i>Fallopia convovulus</i>
Buffalobur	<i>Solanum rostratum</i>
Burdock	<i>Arctium spp.</i>
Buttercup, Corn	<i>Ranunculus arvensis</i>
Carpetweed	<i>Mollugo verticillata</i>

Common Name	Scientific Name
Chickweed, Common	<i>Stellaria media</i>
Cockle, Corn	<i>Agrostemma githago</i>
Cocklebur, Common	<i>Xanthium strumarium</i>
Coreopsis, Plains	<i>Coreopsis tinctoria</i>
Croton, Woolly	<i>Croton capitatus</i>
Devilsclaw	<i>Proboscidea louisianica</i>
Dogfennel (Cypressweed)	<i>Eupatorium capillifolium</i>
Eveningprimrose, Cutleaf	<i>Oenothera laciniata</i>
Flax	<i>Linum</i> spp.
Fleabane, Annual	<i>Erigeron annuus</i>
Flixweed	<i>Descurainia sophia</i>
Henbit	<i>Lamium amplexicaule</i>
Knotweed, Prostrate	<i>Polygonum aviculare</i>
Kochia	<i>Kochia scoparia</i>
Lambsquarters, Common	<i>Chenopodium album</i>
Lettuce, Prickly	<i>Lactuca serriola</i>
Mallow, Common	<i>Malva neglecta</i>
Marestail (Horseweed)	<i>Conyza canadensis</i>
Morningglory, Ivyleaf	<i>Ipomea hederacea</i>
Tall	<i>Ipomea purpurea</i>
Mustard, Annual	<i>Brassica</i> spp.
Tansy	<i>Descurainia pinnata</i>
Pennycress, Field	<i>Thlaspi arvense</i>
Pepperweed, Virginia	<i>Lepidium virginicum</i>
Pigweed, Prostrate,	<i>Amaranthus blitoides</i>
Redroot,	<i>Amaranthus retroflexus</i>
Smooth,	<i>Amaranthus hybridus</i>
Tumble	<i>Amaranthus albus</i>
Pineapple weed	<i>Matricaria discoidea</i>
Poorjoe	<i>Diodia teres</i>
Puncturevine	<i>Tribulus terrestris</i>
Purslane, Common	<i>Portulaca oleracea</i>
Ragweed, Common,	<i>Ambrosia artemisiifolia</i>
Lance-leaf,	<i>Ambrosia bidentata</i>
Western	<i>Ambrosia psilostachya</i>
Rocket, London	<i>Sisymbrium irio</i>
, Yellow	<i>Barbarea vulgaris</i>
Sedge	<i>Cyperus compressus</i>
Shepherdspurse	<i>Capsella bursa-pastoris</i>
Smartweed, Pennsylvania	<i>Polygonum pennsylvanicum</i>
Sneezeweed, Bitter	<i>Helenium amarum</i>
Sunflower, Common (wild)	<i>Helianthus annuus</i>
Thistle, Russian	<i>Salsola iberica</i>
Woodsorrel, Common	<i>Oxalis acetosella</i>
, Yellow	<i>Oxalis stricta</i>

Common Name	Scientific Name
<b>BIENNALS AND PERENNIALS</b>	
Bindweed, field	<i>Convolvulus arvensis</i>
Bittercress	<i>Cardamine</i> spp.
Buckeye	<i>Aesculus</i> spp.
Bull nettle	<i>Cnidioscolus stimulosus</i>
Carrot, Wild	<i>Daucus carota</i>
Chickweed, Field	<i>Cerastium arvense</i>
, Mouseear	<i>Cerastium fontanum</i>
Chicory	<i>Cichorium intybus</i>
Clover	<i>Trifolium</i> spp.
Clover, Hop	<i>Trifolium aureum</i>
Dandelion	<i>Taraxacum officinale</i>
Dock, Curly	<i>Rumex crispus</i>
Elderberry	<i>Sambucus canadensis</i>
Goldenrod, Missouri	<i>Solidago missouriensis</i>

Common Name	Scientific Name
Goldenweed, Common	<i>Iscoma coronopifolia</i>
Groundsel	<i>Senecio vulgaris</i>
Honeysuckle, Hairy	<i>Lonicera hispidula</i>
Horsenettle	<i>Solanum carolinense</i>
Ironweed	<i>Vernonia fasciculata</i>
Ivy, Poison	<i>Rhus radicans</i>
Knapweed, Black	<i>Centaurea nigra</i>
Russian	<i>Rhaponticum repens</i>
Spotted	<i>Centaurea stoebe</i>
Marshelder	<i>Iva annua</i>
Mesquite	<i>Prosopis spp</i>
Milkweed, Antelope-horns	<i>Asclepias asperula</i>
Nettle, Stinging	<i>Urtica dioica</i>
Nightshade, Silverleaf	<i>Solanum elaeagnifolium</i>
Black	<i>Solanum nigrum</i>
Persimmon, Eastern	<i>Diospyros virginiana</i>
Plaintain, Broadleaf	<i>Plantago major</i>
, Buckhorn	<i>Plantago lanceolata</i>
Rabbitbrush	<i>Chrysothamnus pulchellus</i>
Ragwort, Tansy	<i>Jacobaea vulgaris</i>
Redvine	<i>Brunnichia ovata</i>
Sagebrush, Fringed	<i>Artemisia frigida</i>
Smartweed, Swamp	<i>Polygonum hydropiperoides</i>
Sorrel, Red (Sheep Sorrel)	<i>Rumex acetosella</i>
Sowthistle, Perennial	<i>Sonchus arvensis</i>
Spurge, Leafy	<i>Euphorbia esula</i>
Starthistle, Yellow	<i>Centaurea solstitialis</i>
Tallow Tree, Chinese	<i>Triadica sebifera</i>
Teasel	<i>Dipsacus fullonum</i>
Thistle, Bull	<i>Cirsium vulgare</i>
Canada	<i>Cirsium arvense</i>
Musk	<i>Carduus nutans</i>
Plumeless	<i>Carduus acanthoides</i>
Toadflax, Dalmatian	<i>Linaria dalmatica</i>
Vetch	<i>Vicia spp.</i>
Yankeeweed	<i>Eupatorium compositifolium</i>
Yarrow, Common	<i>Achillea millefolium</i>

#### Food/Feed Crop Uses

This product can be used on the following:

- Conservation Reserve Program Land
- Fallow Systems (Between Crop Application)
- General Farmstead
- Grain Sorghum
- Grass (Hay or Silage)
- Industrial Sites
- Pastures
- Rangeland
- Rights-of-way
- Roadsides
- Non-crop Areas
- Wheat
- Sod Farms
- Ornamental & Recreational Turf

These crops are considered Food/Feed crops only when harvested, grazed, or foraged. Otherwise, they are considered non-Food/Feed uses.

## STORAGE AND DISPOSAL

**PROHIBITIONS:** Do not contaminate water, food, or feed by storage or disposal. Do not store under conditions that might adversely affect the container or its ability to function properly.

**PESTICIDE STORAGE:** Do not store below temperature of 32°F or above 100°F. Store in original container in a well-ventilated area separately from fertilizer, feed, and foodstuffs. Keep container tightly closed when not in use. Reduce stacking height where local conditions can affect package strength.

**PESTICIDE DISPOSAL:** Pesticide wastes are toxic. Wastes resulting from this product may be disposed of on site or at an approved waste disposal facility. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law and may contaminate groundwater. If these wastes cannot be disposed of by use 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 DISPOSAL:** Non-refillable containers (1, 2.5, 30 & 55 gallon): Do not reuse or refill this container. Offer for recycling, if available. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

(Non-refillable <5 gallons): 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 ¼ 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 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, state out of smoke.

(Non-refillable >5 gallons): Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ 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. 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, state out of smoke.

Pressure rinse as follows (all sizes): 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 for disposal. Insert pressure rinsing nozzle inside of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Refillable container (250 gallon & bulk): 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 the container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing process 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, state out of smoke.

**In Case of Spill:** In case of large-scale spillage regarding this product, call ChemTrec 800-424-9300.

Steps to be taken in case material is released or spilled:

Dike and contain the spill with inert material (sand, earth, etc) and transfer liquid and solid diking material to separate containers for disposal. Remove contaminated clothing, and wash affected skin areas with soap and water. Wash clothing before re-use. Keep the spill out of all sewers and open bodies of water.

## CONDITIONS OF SALE AND WARRANTY

The DIRECTIONS FOR USE of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed carefully. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as weather conditions or presence of other materials. All such risks shall be assumed by the Buyer.

HELENA AGRI-ENTERPRISES, LLC warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the Directions for Use subject to the inherent risks referred to above. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, HELENA AGRI-ENTERPRISES, LLC MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE OR OF MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THIS WARRANTY DOES NOT EXTEND TO, AND THE BUYER SHALL BE SOLELY RESPONSIBLE FOR, ANY AND ALL LOSS OR DAMAGE WHICH RESULTS FROM THE USE OF THIS PRODUCT IN ANY MANNER WHICH IS INCONSISTENT WITH THE LABEL DIRECTIONS.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BUYER'S EXCLUSIVE REMEDY AND MANUFACTURER'S OR SELLER'S EXCLUSIVE LIABILITY FOR ANY AND ALL CLAIMS, LOSSES, DAMAGES, OR INJURIES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER OR NOT BASED IN CONTRACT, NEGLIGENCE, STRICT LIABILITY IN TORT OR OTHERWISE, SHALL BE LIMITED, AT THE MANUFACTURER'S OPTION, TO REPLACEMENT OF OR THE REPAYMENT OF THE PURCHASE PRICE FOR THE QUANTITY OF PRODUCT WITH RESPECT TO WHICH DAMAGES ARE CLAIMED. When Buyer suffers losses or damages resulting from the use or handling of this product (including claims based on contract, negligence, strict liability, or other legal theories), Buyer must promptly notify Seller in writing of any claims to be eligible to receive either remedy stated above. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, IN NO CASE SHALL HELENA AGRI-ENTERPRISES, LLC OR THE SELLER BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT. HELENA AGRI-ENTERPRISES, LLC and the Seller offer this product, and the Buyer accepts it, subject to the foregoing Conditions of Sale and Warranty, which may be varied only by agreement in writing signed by a duly authorized representative of HELENA AGRI-ENTERPRISES, LLC. No employee or agent of HELENA AGRI-ENTERPRISES, LLC or the Seller is authorized to vary or exceed the terms of this Warranty in any other manner.