



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

January 26, 2023

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

Subject: Registration Review Label Amendments Incorporating Mitigation Measures from the Interim Decision for S-Metolachlor and the National Marine Fisheries Services' (NMFS) Biological Opinion on the Effects of S-Metolachlor on Pacific Salmonids
Product Name: HM-1782-A-Herbicide
EPA Registration Number: 5905-623
Application Dates: 3/25/2021, 8/4/2021
Decision Numbers: 572626, 589300

Dear Bill Washburn:

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

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

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

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

If you have any questions about this letter, please contact Ben Tweed at tweed.benjamin@epa.gov.

Sincerely,



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

Enclosure

ACCEPTED

Jan 26, 2023

Under the Federal Insecticide, Fungicide and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 5905-623

Sulfentrazone	GROUP	14	HERBICIDE
Metribuzin	GROUP	5	HERBICIDE
S-Metolachlor	GROUP	15	HERBICIDE

HM-1782-A HERBICIDE

Active Ingredient:	By Wt.
Sulfentrazone.....	4.66%
Metribuzin.....	11.29%
S-Metolachlor	52.67%
Other Ingredients:	<u>31.38%</u>
TOTAL:	100.00%

Contains 0.4 lb. ai sulfentrazone, 1.0 lb. ai metribuzin, and 4.7 lb. ai s-metolachlor per gallon.

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 to you in detail.)”

FIRST AID	
If in Eyes	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15- 20 minutes. • Remove contact lenses, if present, after the first 5 minutes. Then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
If Swallowed	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If Inhaled	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to mouth, if possible. • Call a poison control center or doctor for further treatment advice.
HOT LINE NUMBER: Have the product container or label with you when calling a poison control center or doctor, or going for treatment. In case of health emergency, call CHEMTREC toll-free 1-800-424-9300	

See booklet for additional PRECAUTIONARY STATEMENTS and COMPLETE DIRECTIONS FOR USE

EPA REG. NO. 5905-623
EPA EST. NO. _____

AD 050420
NET CONTENTS: _____



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

PRECAUTIONARY STATEMENTS
Hazards to Humans and Domestic Animals
WARNING

Causes substantial but temporary eye injury. Harmful if swallowed or inhaled. Do not get in eyes or on clothing. Avoid breathing spray mist. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. 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.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

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

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as barrier laminate, butyl rubber, nitrile rubber, or Viton
- Shoes plus socks
- Protective eyewear

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

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

Engineering Controls

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR 170.607), the handler PPE requirements may be reduced or modified as specified in the WPS. Mixers and loaders supporting aerial applications are required to use closed systems. The closed system must be used in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.607].

When using the closed system, the mixers' and loaders' PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations

Users should:

- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- 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.
- 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.

Environmental Hazards

This pesticide is toxic to fish and marine/estuarine invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to terrestrial and aquatic plants in neighboring areas. Do not contaminate water when disposing of equipment washwaters or rinsate.

Drift and runoff of sulfentrazone products may be hazardous to plants in adjacent areas.

Reporting Ecological Incidents:

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

GROUNDWATER ADVISORY

Metribuzin is a chemical which can travel (seep or leach) through soil and can contaminate groundwater which may be used as drinking water. Metribuzin has been found in groundwater as a result of agricultural use. Users are advised not to apply metribuzin where the water table (groundwater) is close to the surface, and where the soils are very permeable, i.e., well drained soils such as loamy sands.

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

Contact your local agricultural agencies for further information on the type of soil in your area and the location of groundwater.

Do not use on coarse soils classified as sand, which have less than 1% organic matter.

SURFACE WATER ADVISORY

Sulfentrazone can contaminate surface water through spray drift. Under some conditions, this product may also have a high potential for runoff into surface water (primarily via dissolution in runoff water), for several to many months post-application. These include poorly draining or wet soils with readily visible slopes toward adjacent surface waters, frequently flooded areas, areas overlying extremely shallow groundwater, areas with in-field canals or ditches that drain to surface water, areas not separated from adjacent surface waters with vegetated filter strips, and areas over-lying tile drainage systems that drain to surface waters.

This product may impact surface water quality due to runoff of rainwater. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having high potential for reaching surface water via runoff for several weeks or months after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of S-metolachlor from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall or irrigation is expected to occur within 48 hours.

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

Mixing/Loading Instructions

Care must be taken when using this product to prevent back-siphoning into wells, spills or improper disposal of excess pesticide, spray mixtures, or rinsates.

Check-valves or antisiphoning devices must be used on all mixing and/or irrigation equipment.

HM-1782-A Herbicide may not be mixed or loaded within 50 feet of any wells (including abandoned wells and drainage wells), sinkholes, perennial or intermittent streams and rivers, and natural or impounded lakes and reservoirs. This setback does not apply to properly capped or plugged abandoned wells and does not apply to impervious pads or properly diked mixing/loading areas.

Operations that involve mixing, loading, rinsing, or washing of this product into or from pesticide handling or application equipment or containers within 50 feet of any well are prohibited unless conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be positioned on or moved across the pad. Such a pad shall be designed and maintained to contain any product spills or equipment leaks, container or equipment rinse or wash water, and rainwater that may fall on the pad. Surface water shall not be allowed to either flow over or from the pad, which means the pad must be self-contained. The pad shall be sloped to facilitate material removal. An unroofed pad shall be of sufficient capacity to contain at a minimum 110% of the capacity of the largest pesticide container or application equipment on the pad.

A pad that is covered by a roof of sufficient size to completely exclude precipitation from contact with the pad shall have a minimum containment capacity of 100% of the capacity of the largest pesticide container or application equipment on the pad. Containment capacities as described above shall be maintained at all times. The above specific minimum containment capacities do not apply to vehicles when delivering pesticide shipments to the mixing/loading site. States may have in effect additional requirements regarding wellhead setbacks and operational containment.

Product must be used in a manner that will prevent back siphoning in wells, spills or improper disposal of excess pesticide, spray mixtures or rinsates.

Physical/Chemical Hazards

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

DIRECTIONS FOR USE

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

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

For any requirements specific to your State or Tribe, consult the Agency responsible for pesticide regulation.

Endangered Species Protection Requirements:

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

AGRICULTURAL USE REQUIREMENTS

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

Re-entry Interval

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

Exception: if the product is soil-incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

For early entry into 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 wear:

- Coveralls,
- Chemical-resistant gloves such as barrier laminate, butyl rubber, nitrile rubber, or Viton, and
- Protective eyewear

WEED RESISTANCE MANAGEMENT

HM-1782-A Herbicide provides three modes of action- Protoporphyrinogen Oxidase IX (PPO IX) (Group 14), long chain fatty-acid inhibition (Group 15), and C1 photosynthesis photosystem II inhibition (Group 5). Some weeds are known to develop resistance to herbicides that have been used repeatedly. While the development of herbicide resistance is well understood, it is not easily predicted. Therefore herbicides should be used in conjunction with the resistance management strategies in the area. Consult the local or State agricultural advisors for details.

Always apply this product at the listed rates and in accordance with the use directions. Do not use less than listed label rates alone or in tank mixtures. Do not use reduced rates of the tank mix partner. For optimum performance, scout fields carefully and begin applications before weed germination or when weeds are smaller rather than larger. If resistance is suspected, contact the local or State agricultural advisors.

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

- Rotate the use of HM-1782-A or other Group 5, 14 and 15 herbicides within a growing season sequence or among growing seasons with different herbicide groups that control the same weeds in a field.
- Use tank mixtures with herbicides from a different group if such use is permitted; where information on resistance in target weed species is available, use the less resistance-prone partner at a rate that will control the target weed(s) equally as well as the more resistance-prone partner. Consult your local extension service or certified crop advisor if you are unsure as to which active ingredient is currently less prone to resistance.

- Adopt an integrated weed-management program for herbicide use that includes scouting and uses historical information related to herbicide use and crop rotation, and that considers tillage (or other mechanical control methods), cultural (e.g., higher crop seeding rates; precision fertilizer application method and timing to favor the crop and not the weeds), biological (weed-competitive crops or varieties) and other management practices.
- Scout after herbicide application to monitor weed populations for early signs of resistance development. Indicators of possible herbicide resistance include: (1) failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds; (2) a spreading patch of non-controlled plants of a particular weed species; (3) surviving plants mixed with controlled individuals of the same species. If resistance is suspected, prevent weed seed production in the affected area by an alternative herbicide from a different group or by a mechanical method such as hoeing or tillage. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields and planting clean seed.
- If a weed pest population continues to progress after treatment with this product, discontinue use of this product, and switch to another management strategy or herbicide with a different mode of action, if available.
- Contact your local extension specialist or certified crop advisors for additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.
- For further information or to report suspected resistance, contact Helena Agri-Enterprises, LLC representatives at 901-761-0050 or at www.helenaagri.com.

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 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 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 seedbank.

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

PRODUCT INFORMATION

HM-1782-A Herbicide is a soil-applied herbicide for the control of susceptible broadleaf, grass and sedge weeds. If adequate moisture (1/2" to 1") from rainfall or irrigation is not received within 7 to 10 days after the **HM-1782-A Herbicide** treatment, a shallow incorporation (less than 2"), may be needed to obtain desired weed control.

When activating moisture is not received, a planned post-emergence application of a labeled herbicide will be needed for optimum weed control. If an activating rainfall (1/2" to 1") is not received, **HM-1782-A Herbicide** will provide a reduced level of control of susceptible germinating weeds.

Observe all instructions, crop restrictions, mixing directions, application precautions, replanting directions, rotational crop guidelines and other label information of each product when tank mixing with **HM-1782-A Herbicide**. Tank mixtures are permitted only in those states where the tank mix partner is registered.

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.

HM-1782-A Herbicide can be mixed with water, liquid fertilizer, or mixtures of water and liquid fertilizer and applied as a preplant or preemergence treatment to labeled crops.

Under normal growing conditions, **HM-1782-A Herbicide** exhibits excellent crop safety. Soil applications of **HM-1782-A Herbicide** must be made before crop seed germination to prevent injury to the emerging crop seedlings. **HM-1782-A Herbicide** applied after crop emergence will cause severe injury to the crop. Poor growing conditions, such as excessive soil moisture, cool temperatures, and soil compaction or the presence of various pathogens may impact seedling vigor. Under these conditions, the active ingredients in **HM-1782-A Herbicide** can contribute to crop response. Refer to the specific directions of use for a particular crop/use pattern as set forth below for additional information.

Mechanism of Action

Following the application of **HM-1782-A Herbicide** to soil, germinating seedlings take up **HM-1782-A Herbicide** from the soil solution. The amount of **HM-1782-A Herbicide** in soil solution available for weed uptake is determined primarily by soil type, soil organic matter and soil pH. Similar to other herbicides, **HM-1782-A Herbicide** adsorbs to the clay and organic matter (OM) fractions of soils; effectively limiting the amount of active ingredient immediately available to control weeds.

HM-1782-A Herbicide use rate and crop response are influenced by soil type, organic matter and pH. Coarse-textured and high pH (>7.2 soils) will exhibit increased weed control and crop response with **HM-1782-A Herbicide**. It is important to know the soil type and soil pH levels of the field (or areas within a field) before application to determine the proper rate of **HM-1782-A Herbicide** for the crop. Soil organic matter content and soil pH can vary widely and independently of soil type and requires an accurate analysis of representative soil samples or grids of soil samples within a specific field to determine its content.

It is important to note that irrigation with highly alkaline water (high pH) following a **HM-1782-A Herbicide** soil application can also significantly increase the amount of **HM-1782-A Herbicide** available in the soil solution. Irrigation with water having a pH greater than 7.2 could result in adverse crop response. This response will ultimately depend on initial **HM-1782-A Herbicide** application rate, timing, amount and pH of irrigation water and sensitivity of the crop and its growth stage when irrigated.

The risk of adverse crop response will lessen with the advance in growth stage of soybeans.

SOIL TEXTURE CLASSIFICATION CHART

Table 1.

COARSE	MEDIUM	FINE
Sand	Sandy clay loam	Silty clay loam
Loamy sand	Sandy clay	Silty clay
Sandy loam	Loam	Clay loam
	Silt loam	Clay
	Silt	

MANDATORY SPRAY DRIFT MANAGEMENT

Aerial Applications:

- Aerial application is allowed only when environmental conditions prohibit ground application.
- Do not release spray at a height greater than 10 ft above the ground or vegetative canopy, unless a greater application height is necessary for pilot safety.
- When this product is allowed to be applied by air, applicator must use a minimum finished spray volume of 5 gallons per acre.
- Applicators are required to select the nozzle and pressure that deliver coarse or coarser droplets (ASABE S641) when product is used as a preemergent/preplant application.
- Applicators are required to select the nozzle and pressure that deliver medium or coarser droplets (ASABE S641) when product is used as postemergence with a contact burndown herbicide.
- Applicators are required to select the nozzle and pressure that deliver medium or coarser droplets (ASABE S641) for all other applications.
- Do not apply when wind speeds exceed 10 mph at the application site. The boom length must be 75% or less of the wingspan for fixed-wing aircraft and 90% or less of the rotor diameter for helicopters.
- Applicators must use 1/2 swath displacement upwind at the downwind edge of the field.
- Do not apply during temperature inversions.

Ground Boom Applications:

- Ground applicators must use a minimum finished spray volume of 10 gallons per acre.
- When product is tank mixed with a contact burndown herbicide, ground applicators must use a minimum spray volume of 15 gallons per acre.
- User must only apply with the release height recommended by the manufacturer, but no more than 30 inches above the ground or crop canopy.
- Applicators are required to select the nozzle and pressure that deliver coarse or coarser droplets (ASABE S572) when product is used as a preemergent/preplant application.
- Applicators are required to select the nozzle and pressure that deliver medium or coarser droplets (ASABE S572) when product is used as postemergence with a contact burndown herbicide.
- Applicators are required to select the nozzle and pressure that deliver medium or coarser droplets (ASABE S572) for all other applications.
- Nozzles must always point backward parallel with the air stream and never be pointed downward more than 45°.
- Do not apply when wind speeds exceed 10 miles per hour at the application site.
- Do not apply during temperature inversions.

Boomless Ground Applications:

- Ground applicators must use a minimum finished spray volume of 10 gallons per acre.
- When product is tank mixed with a contact burndown herbicide, ground applicators must use a minimum spray volume of 15 gallons per acre.
- Applicators are required to select the nozzle and pressure that deliver coarse or coarser droplets (ASABE S572) when product is used as a preemergent/preplant application.
- Applicators are required to select the nozzle and pressure that deliver medium or coarser droplets (ASABE S572) when product is used as postemergence with a contact burndown herbicide.
- Applicators are required to select the nozzle and pressure that deliver medium or coarser droplets (ASABE S572) for all other applications.
- Nozzles must always point backward parallel with the air stream and never be pointed downward more than 45°.
- Do not apply when wind speeds exceed 10 mph at the application site.
- Do not apply during temperature inversions.

SPRAY DRIFT ADVISORIES

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

IMPORTANCE OF DROPLET SIZE

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

Controlling Droplet Size – Ground Boom

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

Controlling Droplet Size – Aircraft

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

BOOM HEIGHT – Ground Boom

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

RELEASE HEIGHT - Aircraft

Higher release heights increase the potential for spray drift.

SHIELDED SPRAYERS

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

TEMPERATURE AND HUMIDITY

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

TEMPERATURE INVERSIONS

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

WIND

Drift potential generally increases with wind speed. **AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS.** Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

Boomless Ground Applications:

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

Handheld Technology Applications:

Take precautions to minimize spray drift.

Sensitive Areas – The pesticide should only be applied when the wind is blowing away from sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops). To assure that spray will not adversely affect adjacent sensitive non-target plants, apply HM-1782-A Herbicide by aircraft at a minimum upwind distance of 400 ft. from sensitive plants. Avoid application to humans or animals. Flagmen and loaders should avoid inhalation of spray mist and prolonged contact with skin.

Off-Target Movement of HM-1782-A Herbicide

Drift of dilute spray mixtures containing **HM-1782-A Herbicide** must be prevented. Observation of the environmental conditions, correct application equipment design, calibration and application practices will reduce the risk of off-target spray drift. **HM-1782-A Herbicide** can cause damage by drift on to sensitive crops and other plants. This symptomology may manifest initially as discreet, localized spots where contacted by **HM-1782-A Herbicide** drift mixtures. Depending on sensitivity of the plants, the concentration of the spray solution and droplets size these spots or lesions may or may not coalesce. These effects will usually not have lasting effects on plant growth, but can reduce the value of affected fruit or foliage where grade or quality is associated with appearance. In drift instances with sensitive crops, defoliation of affected foliage could result.

CROP ROTATIONAL RESTRICTIONS

The following Table 2 shows the minimum interval in months from the time of the last **HM-1782-A Herbicide** application until **HM-1782-A Herbicide** treated soil can be replanted to the crops listed. When **HM-1782-A Herbicide** is tank mixed with another herbicide, refer to the partner label for re-cropping instructions, following the directions that are most restrictive.

Some crops have rotational intervals greater than 12 months after an **HM-1782-A Herbicide** application due to potential metribuzin residues and crop injury. A representative bioassay of the field shall be completed with the rotational crop to accurately determine the planned crop's sensitivity to **HM-1782-A Herbicide**.

CROP ROTATIONAL RESTRICTIONS*

Table 2

Crop	Interval (Months)
Alfalfa ⁽¹⁾	12
Barley	4 ½
Corn, Field ⁽²⁾	10, 4 ⁽³⁾
Cotton ⁽⁴⁾	18 ⁽⁵⁾ or 12
Peanuts	12
Potatoes	12
Rice	12
Sorghum	18 ⁽⁵⁾ , 12
Soybeans	Anytime
Sugar Beets	36 ⁽⁵⁾ , 24 ⁽⁶⁾
Sunflowers	12
Tobacco	18
Tomato (transplanted only)	4
Wheat	4 ½
Any crop not listed	18 ⁽⁷⁾

(*) Do not rotate to food or feed crops other than those listed on the label.

⁽¹⁾ To avoid injury to rotational alfalfa, do not apply more than 1.9 lb ai S-metolachlor per acre in the previous crop.

⁽²⁾ Field corn includes corn grown for grain, forage or silage, and seed corn.

⁽³⁾ Field corn may be planted after 4 months where **HM-1782-A Herbicide** was applied at 3 pints/acre or less

⁽⁴⁾ Cotton may be planted after 12 months where **HM-1782-A Herbicide** was applied at rates 3.75 pints/acre or less and meets the following conditions:

- Medium and fine soils
- pH <7.2
- Rainfall or irrigation must exceed 15" after application of **HM-1782-A Herbicide** to rotate to cotton

⁽⁵⁾ Crops that have rotational intervals greater than 12 months after an **HM-1782-A Herbicide** application are the result of metribuzin residues and crop injury concerns.

⁽⁶⁾ A rotation interval of 24 months is allowed with a successful bioassay.

⁽⁷⁾ For all other crops not listed, the rotation interval is a minimum of 18 months with a representative bioassay to determine crop safety before planting.

REPLANTING INSTRUCTIONS

If initial planting of labeled crops fails to produce a stand, only crops labeled for **HM-1782-A Herbicide** or the tank mix partner; whichever is most restrictive, may be planted based on the amount of product initially applied. When replanting use minimum soil tillage to preserve the herbicide barrier and achieve maximum weed control.

Replanting Restrictions:

- Do not retreat field with **HM-1782-A Herbicide** or other herbicide containing metribuzin, sulfentrazone and S-metolachlor.
- Do not plant treated fields to any crop at intervals that are inconsistent with the Rotational Crop Guidelines on this label.

MIXING AND LOADING INSTRUCTIONS

HM-1782-A Herbicide may be applied alone, or in tank mixtures with other labeled herbicides for the control of additional weed species. Mixtures with some other pesticides have not been tested. Conduct appropriate compatibility tests prior to tank mixing with other pesticides.

Follow all precautions and restrictions on the tank mix partner label. It is important that spray equipment is clean and free of existing pesticide residues before preparing **HM-1782-A Herbicide** spray mixtures.

For all tanks containing spray solution follow the spray tank clean out procedures specified on the label of the product or products previously applied.

For best results fill spray tank with one half of the volume of clean water needed for the field to be treated. Start agitation system. Slowly add the **HM-1782-A Herbicide** to the spray tank. Carefully rinse the empty container, adding the rinsate to the spray tank. Complete filling the spray tank to the desired level. Continuous spray tank agitation is required at all times to maintain a uniform spray solution.

Make sure **HM-1782-A Herbicide** is thoroughly mixed before application.

Use the **HM-1782-A Herbicide** spray mixture immediately after mixing. Avoid storing the sprayer overnight or for any extended period of time with the **HM-1782-A Herbicide** spray mixture remaining in the tank.

If **HM-1782-A Herbicide** is tank mixed with other labeled herbicides, all additional directions, restrictions and precautions for the tank mixture herbicides must be followed.

SPRAYER EQUIPMENT CLEAN-OUT

As soon as possible after spraying **HM-1782-A Herbicide** and before using sprayer equipment for any other applications, the sprayer must be thoroughly cleaned to avoid potential crop affects using the following procedure. Residues left in mixing equipment, spray tanks, hoses, spray booms and nozzles can cause crop effects if they are not properly cleaned. In addition, users must take appropriate steps to ensure proper equipment clean-out for any other products mixed with **HM-1782-A Herbicide** as required on the other product labels. More complete cleaning can be achieved if the spray system is cleaned immediately following the application.

1. Drain sprayer tank, hoses, spray boom and spray nozzles. Use a high-pressure detergent wash to remove physical sediment and residues from the inside of the sprayer tank and thoroughly rinse. Then, thoroughly flush sprayer hoses, spray boom and spray nozzles with a clean water rinse. Remove and clean spray tips and all filters and screens (tank, spray hose and spray tips) separately in the ammonia solution of Step 2.

2. Next, prepare a sprayer cleaning solution by adding three gallons of ammonia (containing at least 3% active) per 100 gallons of clean water. Prepare sufficient cleaning solution to allow the operation of the spray system for a minimum of 15 minutes to thoroughly flush hoses, spray boom and spray nozzles.

3. Convenient and thorough cleaning of the sprayer can be achieved if the ammonia solution or fresh water is left in the spray tank, hoses, spray booms and spray nozzles overnight or during storage.

4. Before using the sprayer, completely drain the sprayer system. Rinse the tank with clean water and flush through the hoses, spray boom, and spray nozzles with clean water. Remove and clean spray tips and all filters and screens (tank, spray hose and spray tip) separately in an ammonia solution.

5. Properly dispose of all cleaning solution and rinsate in accordance with Federal, State, and local regulations and guidelines.

Sprayer Equipment Restrictions:

Do not apply sprayer cleaning solutions or rinsate to sensitive crops.

Do not store the sprayer overnight or for any extended period of time with **HM-1782-A Herbicide** solution remaining in the tank, spray lines, spray boom plumbing, spray nozzles or strainers

Do not drain or flush equipment on or near desirable trees or plants

If the sprayer has been stored or idle, purge the spray boom and nozzles with clean water before beginning any application.

Should small quantities of **HM-1782-A Herbicide** remain in inadequately cleaned mixing, loading and/or spray equipment, they may be released during subsequent applications potentially causing effects to certain crops and other vegetation. Helena Agri-Enterprises, LLC accepts no liability for any effects due to inadequately cleaned equipment. Do not contaminate any body of water including irrigation water that may be used on other crops.

APPLICATION INFORMATION

Ground and Aerial Application

Ground Application: Apply the proper rate of **HM-1782-A Herbicide** in a minimum of 5 to 40 gallons of spray mixture per acre broadcast.

Aerial Application: Where permitted, apply specified rate in a minimum of 2 to 10 gallons of spray mixture per acre. The maximum release height must be 10 feet from the top of the crop canopy, unless a greater application height is required for pilot safety.

Banded Application: Use proportionally less **HM-1782-A Herbicide** per acre in a band versus a broadcast application. For band application, use 1/4 to 1 gallon of spray mix per inch of band width regardless of row spacing.

BAND TREATMENT APPLICATIONS

For band treatments, apply the broadcast equivalent rate and volume per acre. To determine these:

$$\frac{\text{Band Width in Inches}}{\text{Row Width in Inches}} \times \text{Broadcast Rate per Acre} = \text{Band Rate}$$

$$\frac{\text{Band Width in Inches}}{\text{Row Width in Inches}} \times \text{Broadcast Volume per Acre} = \text{Band Volume}$$

Application Restrictions

- Do not apply aerially when wind speed is greater than 10 mph.
- Aerial application is allowed only when environmental conditions prohibit ground application
- When this product is allowed to be applied by air, applicator must use a minimum finished spray volume of 5 gallons per acre.
- Do not apply when wind speed favors drift beyond the area intended for treatment.
- Do not apply under conditions which favor runoff or wind erosion of soil containing this product to non-target areas. To prevent off-site movement due to runoff or wind erosion:
 1. Avoid treating powdery dry or light sand soils when conditions are favorable for wind erosion. Under these conditions, the soil surface should first be settled by rainfall or irrigation.
 2. Do not apply to impervious substrates, such as paved or highly compacted surfaces.
 3. Do not use tailwater from the first flood or furrow irrigation of treated fields to treat non-target crops, unless at least 1/2 inch of rainfall has occurred between application and the first irrigation.

Application with Liquid Fertilizer

HM-1782-A Herbicide may be applied using liquid fertilizer or fertilizer and water mixtures as the carrier. Adequate soil coverage is essential to achieve acceptable levels of weed control.

Herbicide mixing, solution stability and/or compatibility problems may occur when liquid fertilizers are used as a carrier. Compatibility tests must be conducted prior to mixing to insure tank mixture compatibility and stability. The use of compatibility agents may be beneficial to achieve and maintain a homogenous solution.

Mixing Instructions for Liquid Fertilizer Applications

Fill the clean spray tank to one half of the total volume with the fertilizer solution. Start the spray tank agitation system. Pre slurry **HM-1782-A Herbicide** with water prior to adding to the spray tank. Carefully rinse the empty container, adding the rinsate to the spray tank.

Complete filling the spray tank to the desired level. Sufficient and continuous spray tank agitation is required at all times to maintain a homogenous spray solution. The spray system must be designed such that there is sufficient flow capacity to uniformly apply the spray mixture and maintain adequate tank agitation. Some systems may require separate pumps to simultaneously supply the spray system and the spray tank agitation system. Ensure the **HM-1782-A Herbicide** slurry is thoroughly mixed before application.

For tank mixtures with other herbicide(s), a compatibility test must be conducted to insure product compatibility before mixing.

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.

Apply the **HM-1782-A Herbicide** spray mixture immediately after mixing. It is not recommended to store the sprayer overnight or for any extended period of time with the **HM-1782-A Herbicide** spray mixture remaining in the tank. Thoroughly re-agitate spray mixture if product is left sitting in the tank for extended period of time.

If **HM-1782-A Herbicide** is mixed and loaded in nurse tanks, thorough agitation of spray solution is required prior to off-loading and application.

Follow all **HM-1782-A Herbicide** label directions regarding product use rates per acre, registered crops, application instructions, incorporation directions, special instructions and all precautions.

All individual state regulations relating to liquid fertilizer blending, storage, transportation, registration, labeling, and application are the responsibility of the individual and/or company preparing, selling or applying the **HM-1782-A Herbicide** and fertilizer mixture.

SOYBEANS

Table 3:

HM-1782-A Standard Rate Programs (Soybeans)			
Fall, Spring Preplant, Pre-plant Incorporated, Preemergence Conservation or Conventional Tillage Applications			
Broadcast Rate	Pints HM-1782-A Herbicide per acre *		
	Soil Texture **		
% Organic Matter ***	Coarse	Medium	Fine
1.0 - 2.0	2.25 – 2.50	2.50 – 2.75	2.50 – 3.00
2.0 – 4.0	2.50 – 2.75	2.75 -3.00	3.00

***Use the higher rate for suppression of grasses and sedges.**
****Refer to the previous information on soil types under the SOIL CLASSIFICATION CHART.**
*****Do not apply to soils with <1% organic matter.**
Adverse crop response can occur on soils with pH greater than 7.2. To reduce adverse crop response, use the lowest rate of HM-1782A Herbicide on soils per given soil texture and OM % if pH >7.5.

The maximum single application rate for **HM-1782-A Herbicide** is 3.0 pints per acre, the equivalent of 0.15 pounds a.i of sulfentrazone, 0.38 pounds a.i of metribuzin and 1.76 pounds a.i of S-metolachlor per acre.

The maximum annual application rate for **HM-1782-A Herbicide** is 4.0 pints per acre, the equivalent of 0.20 pounds a.i of sulfentrazone, 0.50 pounds a.i of metribuzin and 2.35 pounds a.i of S-metolachlor per acre.

Weeds Controlled

The following is a general list of weeds for which **HM-1782-A Herbicide** has shown control or suppression. The level of control will vary per use rate, cropping system, environmental conditions, moisture levels and soil type. **HM-1782-A Herbicide** may not control all of the weeds listed under all crop conditions.

Amaranth, Palmer	<i>Amaranthus palmeri</i> S. Watson
Amaranth, spiny	<i>Amaranthus, spinosus</i> L.
Amaranth, spleen	<i>Amaranthus dubius</i> Mart. ex Thell.
Barnyardgrass	<i>Echinochloa crus-galli</i> (L.) Beauv.

Bluegrass, annual	<i>Poa annua</i> L.
Bristly starbur	<i>Acanthospermum hispidum</i> DC.
Broadleaf signalgrass	<i>Urochloa platyphylla</i> (Nash) R. D. Webster
Browntop millet	<i>Urochloa ramosa</i> (L.) Nguyen
Buffalobur	<i>Solanum rostratum</i> Dunal
Carpetweed	<i>Mollugo verticillata</i> L.
Copperleaf, hophornbeam	<i>Acalypha ostryifolia</i> Riddell
Cocklebur	<i>Xanthium strumarium</i> L.
Crabgrass spp.	<i>Digitaria</i> spp.
Crowfootgrass	<i>Dactyloctenium aegyptium</i> (L.) Willd.
Cupgrass, prairie	<i>Eremioclhoa contracta</i> Hitchc.
Cupgrass, southwestern	<i>Eremioclhoa acuminata</i> (J. Presl) Kunth
Fall panicum	<i>Panicum dichotomiflorum</i> Michx.
Florida beggarweed	<i>Desmodium tortuosum</i> (Sw.) DC.
Florida pusley	<i>Richardia scabra</i> L.
Foxtail, giant	<i>Setaria faberi</i> Herrm.
Foxtail, green	<i>Setaria viridis</i> (L.) Beauv.
Foxtail, robust	<i>Setaria viridis</i> var. <i>robusta</i>
Foxtail, yellow	<i>Setaria glauca</i> (L.) Beauv.
Foxtail, bristly	<i>Setaria verticillata</i> (L.) Beauv.
Galinsoga	<i>Galinsoga</i> spp.
Goosegrass	<i>Eleusine indica</i> (L.) Gaertn.
Groundcherry, cutleaf	<i>Physalis angulata</i> L.
Hairy galinsoga	<i>Galinsoga ciliata</i> (Raf.) Blake
Jimsonweed	<i>Datura stramonium</i> L.
Johnsongrass, seedling	<i>Sorghum halepense</i> (L.) Pers.
Junglerice	<i>Echinochloa colona</i> (L.) Link
Knotweed	<i>Polygonum</i> spp.
Kochia	<i>Kochia scoparia</i> (L.) Schrad.
Lambsquarters, common	<i>Chenopodium album</i> L.
Morningglory, entireleaf	<i>Ipomoea hederacea integrisc</i>
Morningglory, ivyleaf	<i>Ipomoea hederacea hederacea</i>
Morningglory, palmleaf	<i>Ipomoea wrightii</i>
Morningglory, pitted	<i>Ipomoea lacunosa</i> L.
Morningglory, purple	<i>Ipomoea turbinata</i>
Morningglory, red	<i>Ipomoea coccinea</i> L.
Morningglory, ivyleaf red	<i>Ipomoea hederifolia</i> L.
Morningglory, smallflower	<i>Jacquemontia tamnifolia</i> (L.) Griseb.
Morningglory, tall	<i>Ipomoea purpurea</i> L. (Roth)
Nightshade, black	<i>Solanum nigrum</i> L.
Nightshade, eastern black	<i>Solanum ptycanthum</i> Dunal
Pigweed, redroot	<i>Amaranthus retroflexus</i> L.
Pigweed, smooth	<i>Amaranthus hybridus</i> L.
Pigweed, spiny	<i>Amaranthus spinosus</i> L.
Purslane	<i>Portulaca</i> spp.
Ragweed, common	<i>Ambrosia artemisiifolia</i> L.
Red rice	<i>Oryza sativa</i> L.
Redweed	<i>Melochia corchorifolia</i> L.
Sandbur	<i>Cenchrus</i> spp.
Sesbania	<i>Sesbania</i> spp.
Shattercane	<i>Sorghum bicolor</i> (L.) Moench ssp. <i>Verticilliflorum</i> (Steud.) de Wet ex Wiersema & J. Dahib.
Shepherd's purse	<i>Capsella bursa-pastoris</i> (L.) Medik.
Sicklepod	<i>Senna obtusifolia</i> (L.) H.S. Irwin & Barneby
Sida, prickly	<i>Sida spinosa</i> L.
Smartweed, Pennsylvania	<i>Polygonum pensylvanicum</i> L.
Sorghum, volunteer	<i>Sorghum bicolor</i> (L.) Moench ssp. <i>bicolor</i>
Spotted spurge	<i>Euphorbia maculata</i> L.
Sprangletop	<i>Diplachne</i> spp.
Spurred anoda	<i>Anoda cristata</i> (L.) Schtdl.
Star-of-Bethlehem	<i>Ornithogalum umbellatum</i> L.
Stinkgrass	<i>Eragrostis cilianensis</i> (All.) Vignolo ex. Janch.
Sunflower	<i>Helianthus</i> spp.
Texas millet	<i>Urochloa texana</i> (Buckley) R. Webster

Thistle, Russian	<i>Salsola tragus L.</i>
Tropical spiderwort (Benghal dayflower)	<i>Commelina benghalensis L.</i>
Velvetleaf	<i>Abutilon theophrasti Medik.</i>
Venice mallow	<i>Hibiscus trionum L.</i>
Waterhemp, common	<i>Amaranthus rudis L.</i>
Waterhemp, tall	<i>Amaranthus tuberculatus (Moq.) J. D. Sauer</i>
Wheat, volunteer	<i>Triticum aestivum L.</i>
Wild mustards	
Witchgrass	<i>Panicum capillare L.</i>
SEDGES (suppression only)	
Nutsedge, purple	<i>Cyperus rotundus L.</i>
Nutsedge, yellow	<i>Cyperus esculentus L.</i>
Sedge, annual	<i>Cyperus compressus L.</i>

FALL APPLICATIONS

HM-1782-A Herbicide may be applied as a fall treatment to the stubble of harvested crops for the burndown of existing vegetation and preemergence control of labeled weeds the following spring in no-till and conservation tillage production systems. **HM-1782-A Herbicide** can be applied to the stubble of a harvested crop in no-till or to the soil surface of conservation tillage fields after harvest when the sustained soil temperature is 55 degrees F and falling at a soil depth of 4 inches. Apply after September 30 in those areas North of Interstate 90 and after October 15 in those areas North of Interstate 40. To obtain adequate weed control in all areas soils must have sustained temperature of 55 degrees F or lower. Applications to ridge till production systems must be made after the formation of ridges or beds.

If weeds are emerged at the time of application, utilize a tank mixture with a suitable burndown herbicide at labeled rates. Fall applied burndown treatments should be made with a minimum of 15 gallons per acre to achieve adequate coverage of the weeds being treated. Gallonage should be increased where weed density is high or heavy crop residue levels are present. When making burndown applications to emerged weeds, the addition of adjuvants such as COC or MSO to the spray mixture can be used to enhance the burndown activity of the application. If weeds are present at time of **HM-1782-A Herbicide** application apply with appropriate burndown herbicides for improved control of existing weeds. Refer to product labels for use rates and instructions.

Fall Application Restrictions:

- Apply after September 30 in ND, SD, MN, WI and north of Route 30 in IA.
- Apply after October 15 north of Route 91 in NE and south of Route 30 in IA.
- Apply after October 31 north of Route 136 in IL.
- Do not make fall applications south of Interstate 70.

SPRING APPLICATIONS

Preplant Surface:

HM-1782-A Herbicide may be applied up to 30-45 days prior to planting (Early Preplant) in no-till or minimum till cropping systems. For applications earlier than 30 days prior to planting, the high rate in the rate range may be needed for extended residual control. **HM-1782-A Herbicide** provides limited burndown of small weeds. **HM-1782-A Herbicide** applied early pre-plant must be applied in combination with the appropriate burndown herbicide such as glyphosate, glufosinate, paraquat, and/or 2,4-D to achieve acceptable control of existing weeds during application.

Preplant Incorporated and Preemergence Applications:

HM-1782-A Herbicide can be applied Preplant, Preplant Incorporated or Preemergence up to 3 days after planting but prior to emergence. For preplant incorporated applications, incorporation must be uniform and no deeper than 2 inches. Improper soil incorporation may result in erratic weed control and/or crop injury. **HM-1782-A Herbicide** applied near or after crop emergence may cause severe injury to the crop.

HM-1782-A Herbicide can be applied alone or in combination with other soybean herbicides, including those containing sulfentrazone, as long as the sulfentrazone active ingredient rate does not exceed 0.20 lb a.i./A per year. **HM-1782-A Herbicide** may be followed by labeled postemergence soybean herbicides for increased control of grass and broadleaf weeds. Always follow the most restrictive label when tank mixing.

When using **HM-1782-A Herbicide** in no-till or minimum till cropping systems, tank mix with an appropriate burndown herbicide for improved control of existing weeds. Apply on coarse soils no more than 2 weeks prior to planting. When

applying **HM-1782-A Herbicide** with other registered herbicides, refer to specific label information on precautions, restrictions, instructions, limitations, application methods and timings, and weeds controlled.

PRECAUTIONS:

Follow instructions below to minimize or prevent crop injury when using **HM-1782-A Herbicide**:

- Use minimize tillage practices in fields to be applied with **HM-1782-A Herbicide** to prevent crop injury.
- Avoid application of **HM-1782-A Herbicide** to soils have a calcareous surface area or a pH of 7.2 or higher.
- Due to the sensitivity of certain soybean varieties to S-metolachlor, sulfentrazone and/or metribuzin, consult your Helena Agri-Enterprises representative or your seed supplier for information on the tolerance of newly released soybean varieties to avoid crop injury, prior to use of **HM-1782-A Herbicide**.
- Use caution when applying **HM-1782-A Herbicide** in conjunction with soil-applied organic phosphate pesticides to avoid crop injury.
- Over application of **HM-1782-A Herbicide** via spray boom overlapping may result in crop stand loss and persistent soil residues.
- Uneven application or improper incorporation of **HM-1782-A Herbicide** can decrease the level of weed control and/or increase the level of crop injury.
- Avoid application of **HM-1782-A Herbicide** to any soil classified as sand with less than 1% organic matter.
- Avoid incorporation of **HM-1782-A Herbicide** into soil deeper than indicated on the label.
- Make sure sprayers are not calibrated accurately before applying **HM-1782-A Herbicide**.
- Avoid application of **HM-1782-A Herbicide** in poorly drained areas where water may stand for several days after heavy rains.
- Use caution and adjust rate and/or incorporation depth of **HM-1782-A Herbicide** accordingly, when soybeans are planted less than 1 1/2 inches deep.
- If replanting is necessary in fields treated with **HM-1782-A Herbicide** as directed on this label, the field may be replanted to soybeans.

RESTRICTIONS

- **HM-1782-A Herbicide** may only be used to control susceptible broadleaf, grass and sedge weeds in soybeans.
- Do not contaminate any body of water including irrigation water that may be used on other crops.
- Do not use in nurseries, turf or landscape plantings.
- Do not apply this product using low-pressure or hi-volume hand wand equipment.
- Do not apply this product through any type of irrigation system.
- Do not apply more than 4.0 pints (0.20 lb. sulfentrazone, 2.35 lbs. S-metolachlor or 0.5 lb. metribuzin) per acre of **HM-1782-A Herbicide** per year.
- Do not graze or feed treated soybean forage, hay or straw to livestock for 40 days after treatment.
- Do not use on soils classified as sand, which has less than 1% organic matter.
- Do not apply to frozen soils or existing snow cover to prevent **HM-1782-A Herbicide** runoff from rain or snowmelt that may occur following application.
- Do not apply after crop seed germination.

SOYBEAN TOLERANCE

HM-1782-A Herbicide has been tested on a number of soybean cultivars, however, it has not been tested on all soybean varieties. The vast majority of cultivars tested when used according to label guidelines have demonstrated tolerance to HM-1782-A Herbicide. A limited number of soybean cultivars have shown some level of injury when used according to label guidelines and should not be planted when an HM-1782-A Herbicide program is planned. Do not use HM-1782-A Herbicide on the following soybean varieties: Altona, AP55, AP 71, Asgrow 6520, Burlison, Coker 102, Coker 156, Dassel, GL 3202, Govan, Maple Amber, NB 3665, NKS 1884, Paloma 350, Portage, Regal, Semmes, Terra-Vig 505, Terra-Vig 606, Tracy, Vansoy, and Vinton 81.

For further information regarding soybean tolerance to an **HM-1782-A Herbicide** treatment consult University or Extension weed management specialists for additional information on specific local varieties or cultivars and any other pertinent information on HM-1782-A Herbicide under specific local conditions prior to applying product. If cool/cold weather or heavy rainfall occurs immediately following an **HM-1782-A Herbicide** application, soybean stunting or stand loss could occur. Yields have not been affected where early season stunting has occurred.

Injury to soybeans can also occur under the following conditions: (1) excessive rate for soil type, (2) boom overlap, (3) improper sprayer calibration, (4) error in mixing procedures, (5) when soils have a calcareous surface area or pH greater

than 7.5, (6) soil incorporation to deep, (7) when applied with organophosphate pesticides, (8) when heavy rains occur after application, especially in poorly drained areas, (9) when soybeans are planted less than 1 1/2 inches deep, (10) on any soil with less than 1% organic matter.

STORAGE AND DISPOSAL

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

Pesticide Storage

Store product in original container only, away from other pesticides, fertilizer, food or feed. Do not use or store around the home. Do not store below 32°F. Product that has been frozen should be thawed and recirculated prior to its use. Store in a cool, dry place and avoid excess heat.

In Case of Spill

In case of spill, avoid contact, isolate area and keep out animals and unprotected persons. Confine spills. Call CHEMTREC (Transportation and spills): (800) 424-9300.

To Confine Spill

To confine spill: If liquid, dike surrounding area or absorb with sand, cat litter or commercial clay. If dry material, cover to prevent dispersal. Place damaged package in a holding container. Identify contents.

Pesticide Disposal

Waste resulting from the use of this product must be disposed of at an approved waste disposal facility.

Container Handling

Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: (For containers greater than 5 gallons) empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. (For containers 5 gallons or less) Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Triple rinse (or equivalent). Then offer for recycling if available, or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Returnable/Refillable Containers - 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 into application equipment or mix tank. Fill the container about 10% 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 procedure two more times. For final disposal, offer for recycling if available, or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

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

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

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

warranties or representations of any kind; express or implied, concerning the product, including no implied warranty of merchantability or fitness for any particular purpose, and no such warranty shall be implied by law.

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

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

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