



# Harbinger® Herbicide

## FOR USE IN RICE

**ACTIVE INGREDIENT:**

Pendimethalin: N-(1-ethylpropyl)-3,4-dimethyl-2,6-dinitrobenzenamine ..... 37.4%

**OTHER INGREDIENTS\*:** ..... 62.6%**TOTAL** 100.0%

(1.0 gallon contains 3.3 pounds of pendimethalin)

\*Contains aromatic naphtha.

### KEEP OUT OF REACH OF CHILDREN CAUTION/PRECAUCIÓN

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

<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• <b>DO NOT</b> give any liquid to person.</li> <li>• <b>DO NOT</b> induce vomiting unless told to do so by a poison control center or doctor.</li> <li>• <b>DO NOT</b> give anything by mouth to an unconscious person.</li> </ul>
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes.</li> <li>• Remove contact lenses, if present, after first 5 minutes; then continue rinsing eyes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If on skin</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15 to 20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>

**NOTE TO PHYSICIAN:** Because of increased risk of chemical pneumonia or pulmonary edema caused by aspiration of the hydrocarbon solvent, vomiting should be induced only under professional supervision. **FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL 1-866-944-8565.**

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EPA EST. NO. 51896-CA-050

EPA EST. NO. 51896-CA-069

NET CONTENTS 2.5 GAL (9.46 L)

040309 V2D 04G13

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**PRECAUTIONARY STATEMENTS**  
**HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

**CAUTION.** Causes moderate eye irritation. Harmful if swallowed or absorbed through the skin. Avoid contact with skin, eyes or clothing.

**Personal Protective Equipment (PPE)**

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for **Category F** on an EPA chemical resistance category selection chart.

**Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of waterproof materials, such as barrier laminate, butyl rubber  $\geq$  14 mils, nitrile rubber  $\geq$  14 mils, neoprene rubber  $\geq$  14 mils, or viton  $\geq$  14 mils
- Shoes plus socks

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

**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 170.240)(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

**USER SAFETY RECOMMENDATIONS**

**Users should:**

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. 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.

**ENVIRONMENTAL HAZARDS**

This product is toxic to fish. **DO NOT** apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent aquatic sites. **DO NOT** contaminate water when disposing of equipment washwaters or rinsate.

**Endangered Species Protection**

If endangered plant species occur in proximity to the application site, the following mitigation measures are required:

- If applied by ground, leave an untreated buffer zone of 200 feet. The product must be applied using a low boom (20 inches above the ground) and ASAE fine to medium/coarse nozzles.
- If applied by air, leave an untreated buffer zone of 170 feet. Must use straight-stream nozzles (D-6 or larger); wind can be no more than 8 mph; and release height must be 15 feet or less.

To determine whether your county has an endangered species, consult the website <http://www.epa.gov/espp/usa-map.htm>.

Endangered Species Bulletins may also be obtained from extension offices or state pesticide agencies. If the bulletin is not available for your specific area, check with the appropriate local state agency to determine if known populations of endangered species occur in the area to be treated.

**DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. This label must be in the possession of the user at the time of pesticide application.

Observe all cautions and limitations in this label and the labels of products used in combination with this product. The use of this product not consistent with this label can result in injury to crops, animals, or persons. Keep containers closed to avoid spills and contamination.

**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 protection.

**DO NOT** allow spray to drift from the application site and contact people, structures people occupy at any time and the associated property, parks and recreation areas, nontarget crops, aquatic and wetland areas, woodlands, pastures, rangelands, or animals.

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**DO NOT** enter or allow other people (or pets) to enter the treated area until sprays have dried.

**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 24 hours.**

**Exception:** if the product is soil injected or 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.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical-resistant gloves made of waterproof materials, such as barrier laminate, butyl rubber  $\geq$  14 mils, nitrile rubber  $\geq$  14 mils, neoprene rubber  $\geq$  14 mils, or viton  $\geq$  14 mils
- Shoes plus socks

**GENERAL INFORMATION**

This product is a selective herbicide for controlling most annual grasses and certain broadleaf weeds as they germinate. Refer to **Table 1** for a complete list of controlled weeds. This product will not control established weeds.

Unusually cold, excessively wet, or hot and dry conditions that delay germination or extend germination over a long period of time can reduce weed control.

Overapplication can result in crop-stand loss, crop injury, or soil residues.

Uneven application or improper soil incorporation can decrease weed control or cause crop injury. Soil incorporation deeper than recommended can reduce weed control.

Seedling diseases, cold weather, excessive moisture, shallow or deep planting, low or high soil pH, high soil salt concentration, or drought can weaken seedlings and plants and increase the possibility of crop damage from this product. Under these conditions, crop yields can be reduced.

**Table 1. Weeds Controlled**

(see crop sections for additional weeds controlled)

**Weeds controlled with Harbinger Herbicide applied up to 4.8 pints per acre**

**Grasses**

Annual ryegrass	Foxtail, giant	Japanese brome*	Shattercane*
Barnyardgrass	Foxtail, green	Johnsongrass (seedling)	Signalgrass*
Canarygrass*	Foxtail, yellow	Jointed goatgrass*	Wild proso millet*
Cheat*	Goosegrass	Oat, wild*	Witchgrass
Crabgrass	Hairy chess*	Panicum, fall	Woolly cupgrass*
Crowfootgrass	Itchgrass*	Panicum, Texas	
Downy brome* (Cheatgrass)	Italian ryegrass*	Sandbur, field	

**Broadleaves**

Amaranth, Palmer	Kochia	Mustard, black	Smartweed, Pennsylvania*
Bugloss, small <sup>a</sup>	Lady's thumb	Pigweed species	Spurge, annual
Carpetweed	Lambsquarters, common	Purslane	Velvetleaf*
Chickweed, common*	Lambsquarters, slimleaf	Pusley, Florida	Waterhemp species
Henbit	London rocket*	Shepherdspurse*	

\*Suppression

**MODE OF ACTION**

This product is a meristematic inhibitor that interferes with the plant's cellular division or mitosis. This and/or other products with the meristematic inhibiting mode of action may not effectively control naturally occurring biotypes of some of the weeds listed on this label. A weed biotype is a naturally occurring plant within a given species that has a slightly different, but distinct, genetic makeup from other plants. Other herbicides with the meristematic inhibiting mode of action include other dinitroaniline herbicides, such as trifluralin. If

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naturally occurring meristematic inhibiting resistant biotypes are present in a field, this product and/or any other meristematic inhibiting mode of action herbicide should be tank mixed or applied sequentially with an appropriate registered herbicide having a different mode of action to ensure control.

**APPLICATION RATE**

Use rates for this product when used alone, in tank mix, or sequential applications are given in **Crop-Specific Information**. Use rates of this product vary by soil texture and organic matter. See **Table 2** for soil texture groupings used in this label.

**Table 2. Soil Texture Groups**

<b>COARSE</b>	<b>MEDIUM</b>	<b>FINE</b>
sands	sandy clay loams*	silty clay loams*
loamy sands	sandy clays	silty clays
sandy loams	loams	clay loams
	silt loams	clays
	silts	

\*Sometimes considered transitional soils and may be classified as either medium- or fine-textured soils.

**Peat and Muck** soils: This product may be used on peat and muck soils, but weed control may be inconsistent and/or reduced. Use maximum labeled use rate allowed in the specific crop.

**APPLICATION TIMINGS**

This product will provide most effective weed control when applied by ground or aerial equipment and subsequently incorporated into soil within 7 days after application by rainfall, sprinkler irrigation, or mechanical tillage prior to weed seedling emergence from soil. This product is recommended for preemergence or early postemergence treatment. See **Crop-Specific Information** for specific application directions by crop.

**Preemergence Surface Applications:** Broadcast treatment uniformly to the soil surface at planting and up to 2 days after planting. Rainfall, sprinkler irrigation, or shallow mechanical incorporation within 7 days after application is required to move this product into the upper soil surface where weed seeds germinate. If adequate rainfall or irrigation does not occur and weed seedling emergence begins, a shallow cultivation or rotary hoeing will improve performance.

**Early Postemergence Applications:** This product must be applied prior to weed seedling emergence or in a tank mix with products that control the emerged weeds. Refer to **Crop-Specific Information** for specific postemergence application recommendations by crop.

**SPRAYING INSTRUCTIONS**

This product may be applied using either water or sprayable fluid fertilizer (such as straight 32-0-0 or 28-0-0) as the spray carrier. Sprayable fluid fertilizer as a carrier is NOT recommended for use after crop emergence unless the typical fertilizer burn symptoms on the crop are acceptable.

**Aerial Applications**

Uniformly apply in 5.0 or more gallons of water per acre. Exercise caution to minimize drift. DO NOT apply during periods of gusty winds or when wind conditions favor drifting. Spray drift can cause injury to sensitive crops. It is recommended that a flagman or an automatic mechanical flagging unit on the aircraft be used to avoid overlapping and possible crop injury.

**Ground Applications (Broadcast)**

Uniformly apply with properly calibrated ground equipment in 10.0 or more gallons of water per acre or 20.0 or more gallons of liquid fertilizer per acre. Use sprayers equipped with appropriate nozzles that provide uniform and accurate spray distribution and minimize drift. Keep the bypass line on or near the bottom of the tank to minimize foaming. Nozzle and in-line screens must be no finer than 50 mesh. Application of this product during periods of gusty winds may result in uneven applications. DO NOT apply this product postemergence in liquid fertilizers.

If liquid fertilizer/herbicide(s) mixture separates in the spray tank, clogged equipment and uneven application can result. Always predetermine the compatibility of this product alone or with other herbicides based on the following compatibility “**jar test**”:

1. Add 1.0 pint of fertilizer to a quart jar.
2. Add 1.0 to 4.0 teaspoon(s) of the Dry Flowable (DF), Wettable Powder (WP), Aqueous Solution (AS), Flowable (F) or Liquid (L) formulation (depending on mixing ratio required) to the liquid fertilizer. The number of teaspoons of the formulation to add can be determined by the following formula:

$$\frac{\text{pounds or pints of product per acre}}{\text{gallons of fertilizer per acre}} \times 11.4 = \text{number of teaspoons of herbicide to add to 1.0 pint of fertilizer}$$

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3. Close the jar and agitate until the herbicide(s) are evenly dispersed in the liquid fertilizer. If the materials **DO NOT** disperse well, it may be necessary to slurry the chemicals in water before adding to the fertilizer.
4. After dispersing the materials, add appropriate number of teaspoons of this product to the jar and shake well. Add water soluble concentrate herbicides to the mixture last and agitate. Let the mixture stand for 30 minutes and then observe the results. Look for signs of separation: an oily layer or globules, sludge, flakes or other precipitates.
5. Evaluate compatibility.
  - (a) If the herbicide(s) and liquid fertilizer mixture does not separate, use this mixture in your spray tank.
  - (b) If the mixture separates but mixes readily with shaking, the mixture can be used provided that good agitation is maintained in the spray tank.
  - (c) If separation of the mixture occurs and agitation does not correct this problem, a compatibility agent is needed.
6. If the need for a compatibility agent is demonstrated, the following procedure is recommended: Using a clean quart jar, repeat step 1 above and add 0.5 teaspoon of the compatibility agent to the liquid fertilizer. Mix well and repeat steps 2, 3 and 4. If separation or precipitation occurs with the compatibility agent, **DO NOT** use this product with that specific liquid fertilizer.

## **MANAGING OFF-TARGET MOVEMENT**

### **SPRAY DRIFT**

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment- and weather-related factors determines the potential for spray drift. The applicator and grower are responsible for considering all these factors when making decisions. It is the responsibility of the applicator to avoid spray drift onto nontarget areas.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops:

1. The distance of the outermost nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they should be observed.

The applicator should be familiar with and take into account the information covered in the [Spray Drift Reduction Advisory Information](#) presented below.

### **INFORMATION ON DROPLET SIZE**

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential but will not prevent drift if applications are made improperly or under unfavorable environmental conditions (see **WIND, TEMPERATURE AND HUMIDITY, AND TEMPERATURE INVERSIONS**).

### **CONTROLLING DROPLET SIZE**

**Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.

**Pressure** - **DO NOT** exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When high flow rates are needed, use higher flow rate nozzles instead of increasing pressure.

**Number of Nozzles** - Use the minimum number of nozzles that provide uniform coverage.

**Nozzle Orientation** - Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is recommended practice. Significant deflection from the horizontal will reduce droplet size and increase drift potential.

**Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid- or straight-stream nozzles oriented straight back produce the largest droplets and the lowest drift.

### **BOOM LENGTH**

For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

### **APPLICATION HEIGHT**

Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

### **SWATH ADJUSTMENT**

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller droplets, etc.).

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**WIND**

Drift potential is lowest between wind speeds of 2 to 10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. **NOTE:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

**TEMPERATURE AND HUMIDITY**

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

**TEMPERATURE INVERSIONS**

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light, variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified 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.

**SENSITIVE AREAS**

This 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, or nontarget crops or plants) is minimal (e.g. when wind is blowing away from the sensitive areas).

**GENERAL TANK MIXING INFORMATION**

This product may be applied in a tank mix or a sequential application with other herbicides registered for use in a given crop. Refer to the companion label for weeds controlled in addition to this product alone.

When using tank mixtures or sequential applications with this product, always read the companion product label(s) to determine the specific use rates by soil types, weed species, and weed or crop growth stage. In addition, follow all precautions and restrictions including state and local use restrictions that may apply to specific products. Always follow the most restrictive label.

**Uses with Other Products (Tank Mixes)**

If this product is used in combination with any other product except as specifically recommended in writing by Loveland Products, Inc., then Loveland Products, Inc. shall have no liability for any loss, damage, or injury arising out of its use in any such combination not so specifically recommended. If used in combination recommended by Loveland Products, Inc., the liability of Loveland Products, Inc. shall in no manner extend to any damage, loss, or injury not directly caused by the inclusion of the Loveland Products, Inc. product in such combination use, and in any event shall be limited to return of the amount of the purchase price of the product. Always perform a mixing test to check the compatibility of this product with all potential tank mix partners.

**Mixing Instructions**

1. Fill tank 1/2 to 3/4 full with clean water or liquid fertilizer and agitate. Prior to mixing this product or tank mixtures containing this product in liquid fertilizer, refer to appropriate label sections for recommended uses in liquid fertilizer, application instructions, and compatibility determinations.

**NOTE:** This product will **NOT** mix in high salt formulation fertilizers, such as 10-34-0. When utilizing high salt formulation fertilizers as the spray carrier, use one of the following:

- (a) Pre-slurry this product in water prior to adding to tank; use 1:1 ratio of water to this product.
- (b) Add water to fertilizer solution prior to adding this product. The amount of water should be equal to or greater than the amount of this product to be used.

2. This product alone

When using this product alone, add this product to the partially filled tank while agitating and then fill the remainder of the tank with water or liquid fertilizer.

3. Tank mixes containing this product

Add the tank mixture ingredients in the order listed below prior to adding this product.

- (a) **Wettable Powder (WP) formulations** - Make a slurry of the WP in water (1:2 ratio). Add the slurry slowly into the partially filled tank while agitating.
- (b) **Dry Flowable (DF)/Water Dispersible Granule (WDG) formulations** - Add the granules to the partially filled tank while agitating. Make a slurry of the granules in water before adding to liquid fertilizer.
- (c) **Flowable (F) formulations** - Add the F formulation to the partially filled tank while agitating.
- (d) **Water Soluble Concentrate (WSC) formulations** - Add the WSC formulation to the partially filled tank while agitating.
- (e) **Emulsifiable Concentrate (EC) formulations** - Add the EC formulation to the partially filled tank while agitating. After complete mixing, add this product to the tank. Fill the remainder of the tank with water or liquid fertilizer while agitating.



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4. Thorough and continuous sprayer-tank agitation **MUST** be maintained during mixing and spraying of this product. If the spray mixture is allowed to settle for any period of time, thorough agitation is essential to resuspend the mixture before spraying is resumed. Continue agitation while spraying.

### **Cleaning Spray Equipment**

Clean application equipment thoroughly by using a strong detergent or commercial spray cleaner according to the manufacturer's directions, and then triple rinsing the equipment before and after applying this product.

### **RESTRICTIONS AND LIMITATIONS**

- **DO NOT** exceed the maximum labeled rate for any soil type.
- This product will not control established weeds. Destroy emerged weeds prior to application.
- This product is most effective in controlling weeds mechanically incorporated or when incorporated into the weed germination zone by adequate rainfall or overhead irrigation after application.
- When using tank mixtures with this product, always read the companion product label(s) to determine the specific use rates by soil types, weed species, and weed or crop growth stage. In addition, follow all precautions and restrictions including state and local use restrictions that may apply to specific products. Always follow the most restrictive label.
- In the event of a crop loss due to adverse weather conditions or other reasons, any crop registered for a preplant incorporated application of this product can be replanted without adverse effects the same year (see **Crop-Specific Information** for exceptions). If replanting is necessary, **DO NOT** work the soil deeper than the treated zone.
- Refer to **Crop-Specific Information** for crop-specific preharvest intervals and feeding and grazing restrictions.

### **CROP ROTATION RESTRICTIONS**

- Use of this product in accordance with label directions is expected to result in normal growth of rotational crops in most situations; however, various environmental and agronomic factors, such as arid conditions, make it impossible to eliminate all risks associated with the use of this product and, therefore, rotational crop injury is always possible. Soil characteristics and environmental conditions which may contribute to crop stress that may be accentuated by the use of this product include: coarse soils, compaction, high salinity, eroded knolls/hilltops, cold and/or wet soils, drought, and heavy rainfall soon after application.
- When this product is used in tank mix or sequential combinations, refer to labels of other herbicides for additional rotational crop restrictions.
- **Restrictions for rotational cropping after the use of this product are dependent on the application use rate of this product in the primary crop. The user should thoroughly read the following restrictions to determine the rotational crops for their specific situation, according to application use rate.**

### **Rotational Crop Restrictions Following Applications of Harbinger Herbicide to Field and Row Crops**

(a) Crops which are labeled for preplant incorporated application may be planted the same season in which this product was applied.

#### **(b) Sugar beets, Red beets and Spinach**

To avoid crop injury, **DO NOT** plant sugar beets, red beets or spinach for 12 months following a spring application of this product or 14 months following a fall application of this product.

These crops should not be planted for 18 months following a spring application of this product or 20 months following a fall application of this product if rainfall or irrigation was not sufficient to produce a crop.

To ensure thorough mixing of soil prior to planting sugar beets, red beets and spinach, land should be plowed using a moldboard plow to a depth of 12 inches.

#### **(c) Proso millet, Sorghum (milo), and Annual or Perennial grass crops or mixtures**

Proso millet, sorghum (milo), and annual or perennial grass crops or mixtures should not be planted for 10 months after a spring application of this product or 12 months after a fall application of this product except in the following conditions:

To avoid the possibility of crop injury in areas that receive less than 20 inches of rainfall or irrigation to produce a crop, these crops should not be planted for 18 months following a spring application of this product or 20 months following a fall application of this product if rainfall or irrigation was not sufficient to produce a field or row crop.

#### **(d) Wheat and Barley**

Wheat and barley may be planted 4 months after an application of this product, except under the following conditions:

If less than 12 inches of rainfall or overhead irrigation was received between application and rotational crop planting, wheat should not be planted before 12 months after a spring application of this product or 14 months after a fall application of this product.

In dryland areas and/or areas where irrigation is necessary to produce the crop treated with this product, **DO NOT** plant winter wheat or barley as a follow crop if crop failure/destruction occurs and land is fallowed during the summer.

#### **(e) All Other Rotational Crops Not Specifically Addressed Above**

Crops, other than those to which this product may be applied as a preplant incorporated treatment, may be planted the year following application of this product, except under the following condition:

If rainfall or irrigation was not sufficient to produce a crop, delay planting for 18 months following a spring application of this product or 20 months following a fall application of this product.

## CROP-SPECIFIC INFORMATION

**Crop Injury Disclaimer:** Use of this product may result in crop injury, loss or damage to certain crops under a number of conditions, including but not limited to agronomic, cultural, mechanical, and environmental. Numerous risks of loss or damage to certain crops may be associated with the use of this product even when directions for use are followed completely. The user or grower should take all such risks into consideration before deciding to apply the product. **Loveland Products, Inc. recommends testing on a small portion of the target crop to determine if damage is likely to occur.** Each grower who is considering the product for such use should test this product in order to determine its suitability. A grower should use this product only to the extent that in his sole opinion the benefit of use of this product outweighs the potential injury to the grower's crop.

In addition, many factors can affect crop growth and/or yield, including but not limited to, insects, diseases, weed competition, poor seed quality, improper planting depth, mechanical cultivation, poor weather (such as freezing or excessive wind, rain, heat, or cold), lack of or excessive moisture, crusting, fertility, or hardpans. Risk of loss or damage to crops may be associated with the use of this product and contribute to poor stands due to failure of crop to emerge, swelling of roots or other below-ground plant parts, less vigorous plant growth and development, and reduction in yield potential. This product may also cause injury to sensitive rotational crops.

### RICE

This product may be applied as a pre-flood, preemergence application in dry-seeded or drilled rice or as an early postemergence application in dry-seeded rice. Treatments may be applied to conventional, reduced or minimum tillage, and no-till (stale seedbed) rice. The seedbed should be firm and free of clods and must be prepared to allow for good seed coverage. The use of a planter under conditions that do not allow good soil coverage of the rice seed can result in reduced stand or stunting if this product contacts germinating rice seed.

**Additional Weeds Controlled:** In addition to the weeds listed in **Table 1**, this product will control the following weeds in rice: junglerice and sprangletop.

#### Use Methods and Timings

**Pre-Flood, Preemergence** - This product may be applied for preemergence weed control as a pre-flood, pre-rice germination herbicide in lightly incorporated dry-seeded rice or on drilled rice.

**SEEDING DIRECTIONS:** For all rice seed incorporation methods, seed must be incorporated shallowly or no more than 1 inch below soil surface. Seed left on the surface may be injured or killed by this product. ***However, it is recommended that 15 to 20% of seed total be visible at surface in order to ensure that seed is not covered too deeply.*** Seeding rates should be increased by a percentage corresponding to the amount of seed left on the surface. Adjust seeding ratios to meet individual practices, incorporation depths and field conditions.

**EXAMPLE:** Target seeding rate is 150 pounds per acre. If approximately 15% of seed is left on soil surface, seeding rate should then be increased 22.5 pounds per acre to 177.5 pounds per acre.

Seeding depths can be affected by soil textures, tillage practices, irrigation, and methods of mechanical incorporation. Seed that is incorporated either mechanically and/or by irrigation flush must remain at a shallow depth of no more than 1 inch below the soil surface. Fields where rice seed is incorporated too deeply will experience reduced crop stands.

Following are examples of typical implements that can be used for rice seed incorporation: rice roller/ridger, ring roller, light harrow, or flat roller. Regardless of the implement or method of incorporation used, seed incorporation must be less than 1 inch below the soil surface.

After rice seed is incorporated, uniformly apply to soil surface as broadcast spray the tank mixture of this product at 2.4 pints per acre plus **SafeGuard® adjuvant** at 1.6 pints per acre. Use of this product without tank mixing with **SafeGuard adjuvant** can result in crop injury and loss of rice stand.

After herbicide application, flush field with irrigation water with method best employed to facilitate a thorough soaking of field and a rapid drain. Tail water (runoff water) from flood irrigation that contains this product should be recirculated and contained in the field of initial application or used only on adjacent crops for which this product (or other pendimethalin-based products) is registered for use. Rice seed covered with water for longer than 8 days may result in reduced stand and weed control.

**Early Postemergence** - Apply this product as a tank mix partner. Base applications on weed and crop size guidelines of the tank mix partner. **DO NOT** apply to fields with standing water. If necessary, fields may be flushed prior to treatment to produce vigorous rice and weed growth. Since soil and weeds must be completely exposed to spray coverage, no flood water should be on the field at the time of application. Cloddy soil, standing water (puddles) at the time of application, or cracks in the soil that form after application may result in reduced weed control. Because of residual activity of this product, this treatment may be applied if rice is too small to maintain a flood on the field for weed control. However, proper water management practices must be followed for normal rice growth and activity of this product.

Since the residual activity of this product is activated by moisture, this product is most effective in controlling emerging weeds when adequate rainfall or irrigation (flush) is received within 7 days after application.



**HARBINGER® HERBICIDE**  
**EPA REG. NO. 241-337-34704**

**Use Rates**

**Early Postemergence Application**

Soil Texture	Rate (pt/A)
Coarse	1.8
Medium	2.4
Fine	2.4

**Restrictions and Limitations**

- **DO NOT** apply this product as a pre-flood, preemergence treatment in rice unless tank mixed with **SafeGuard adjuvant**.
- **DO NOT** apply this product through any type of irrigation system.
- **DO NOT** apply in liquid fertilizer.
- **DO NOT** use on water-seeded rice except as specified in other Loveland Products, Inc. labeling.
- **DO NOT** apply to rice fields if fields are used for fish production, especially catfish or crayfish farming.
- **DO NOT** use water containing this product residues from rice cultivation to irrigate food or feed crops that are not registered for use with this product.
- In case of a crop failure due to weather conditions or disease following treatment with this product alone or in a tank mixture, only drilled dry-seeded rice may be immediately replanted; however, the grower assumes all risks and consequences associated with replanting of rice because there is the potential for stand reduction or stunting. A 10% increase in seeding rate is recommended. Replant seed below the herbicide layer because reduced stand or stunting may occur if this product contacts germinating rice seed. **DO NOT** replant with gibberellic acid-treated seed. **DO NOT** reapply this product alone or in a tank mixture.
- **DO NOT** apply to stressed rice. Stress factors include cold or hot temperature extremes, excessive moisture or drought, problem soils, poor field drainage, or deep water after application.
- **DO NOT** apply early preemergence nor preplant incorporated as severe rice injury is possible.
- **DO NOT** feed forage or graze livestock in treated fields.

**STORAGE AND DISPOSAL**

**DO NOT** contaminate water, food, or feed by storage or disposal.

**PESTICIDE STORAGE: DO NOT STORE BELOW 40 °F.** Extended storage at temperatures below 40 °F can result in the formation of crystals on the bottom of the container. If crystallization does occur, store the container on its side at room temperature (70 °F) and rock occasionally until crystals redissolve.

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

**CONTAINER DISPOSAL**

**Nonrefillable Container. DO NOT reuse or refill this container.** Triple rinse or pressure rinse container (or equivalent) promptly after emptying; then offer for recycling, if available, or reconditioning, if appropriate, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

**Triple rinse containers small enough to shake (capacity ≤ 5 gallons) as follows:** Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

**Triple rinse containers too large to shake (capacity > 5 gallons) as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank, or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

**Refillable Container.** Refill this container with pesticide only. **DO NOT** reuse this container for any other purpose. Triple rinsing the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. **Triple rinse as follows:** To clean the container before final disposal, empty the remaining contents from this container 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. When this container is empty, replace the cap and seal all openings that have been opened during use; return the container to the point of purchase or to a designated location. This container must only be refilled with a pesticide product. **DO NOT** reuse the container for any other purpose. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn-out threads and closure devices. Check for leaks after refilling and before transport. **DO NOT** transport if this container is damaged or leaking. If the container is damaged, or leaking, or obsolete and not returned to the point of purchase or to a designated location, triple rinse emptied container and offer for recycling, if available, or dispose of container in compliance with state and local regulations.

**For help with any spill, leak, fire or exposure involving this material, call day or night CHEMTREC – 1-800-424-9300.**

**HARBINGER® HERBICIDE  
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**CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY**

BEFORE BUYING OR USING THIS PRODUCT, read the entire Directions for Use and the following Conditions of Sale and Limitation of Warranty and Liability. By buying or using this product, the buyer or user accepts the following Conditions of Sale and Limitation of Warranty and Liability, which no employee or agent of LOVELAND PRODUCTS, INC. or the seller is authorized to vary in any way.

Follow the Directions for Use of this product carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop or other plant injury, ineffectiveness, or other unintended consequences may result from such risks as weather or crop conditions, mixture with other chemicals not specifically identified in this product's label, or use of this product contrary to the label instructions, all of which are beyond the control of LOVELAND PRODUCTS, INC. and the seller. The buyer or user of this product assumes all such inherent risks.

Subject to the foregoing inherent risks, LOVELAND PRODUCTS, INC. warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use when the product is used in strict accordance with such Directions for Use under normal conditions of use. EXCEPT AS WARRANTED IN THIS LABEL AND TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THIS PRODUCT IS SOLD "AS IS," AND LOVELAND PRODUCTS, INC. MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ELIGIBILITY OF THIS PRODUCT FOR ANY PARTICULAR TRADE USAGE.

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