

42750-147

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OCT 5 2007

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

Mr. Morris Gaskins  
Product Registration  
Albaugh, Inc.  
P.O. Box 2127  
Valdosta, GA 31604-2127

SUBJECT: Application for Pesticide Notification (PRN 98-10)  
Request Primary Brand Name Change "Thundermaster"  
EPA Reg. No. 42750-147  
Application Dated August 29, 2007

Dear Mr. Gaskins:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 dated 08/29/07 for the above product. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action(s) requested fall within the scope of PRN 98-10. The label submitted with the application has been stamped "Notification" and will be placed in our records.

If you have any questions, please call me directly at 703-305-6249 or Owen F. Beeder of my staff at 703-308-8899.

Sincerely,

*For Rachel C. Holloman*  
Linda Arrington  
Notifications & Minor Formulations Team Leader  
Registration Division (7505P)  
Office of Pesticide Programs

20916



United States Environmental Protection Agency Washington, DC 20460

 Registration  
 Amendment  
 Other

OPP Identifier Number

Application for Pesticide - Section I

1. Company/Product Number 42750-147	2. EPA Product Manager J. Tompkins	3. Proposed Classification <input checked="" type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) Imazethapyr 1.8% + Glyphosate 22%	PM# 25	
5. Name and Address of Applicant (Include ZIP Code) Albaugh Inc. P.O. Box 2127 Valdosta, GA 31604-2127 <input type="checkbox"/> Check if this is a new address	6. Expedited Review. In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to: EPA Reg. No. _____ Product Name _____	

Section - II

<input type="checkbox"/> Amendment - Explain below.	<input checked="" type="checkbox"/> Final printed labels in response to Agency letter dated _____
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application.
<input checked="" type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Other - Explain below.

**Explanation:** Use additional page(s) if necessary. (For section I and Section II.)

Notification of alternate brand name: THUNDERMASTER  
 This notification is consistent with the provisions of PR Notice 98-10 and EPA regulations at 40 CFR 152.46, and no further changes have been made to the labeling or the confidential statement of formula of this product. I understand that it is a violation of 18 U.S.C. Sec. 1001 to willfully make any false statement to EPA. I further understand that if this notification is not consistent with the terms of PR Notice 98-10 and 40 CFR 152.46, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under section 12 and 14 of FIFRA.

Section - III

1. Material This Product Will Be Packaged In:				2. Type of Container	
Child-Resistant Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Metal	<input checked="" type="checkbox"/> Plastic
* Certification must be submitted	If "Yes" Unit Packaging wgt.	No. per container	If "Yes" Package wgt	<input type="checkbox"/> Glass	<input type="checkbox"/> Paper
				<input type="checkbox"/> Other (Specify) _____	
3. Location of Net Contents Information <input checked="" type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container 1 GL	5. Location of Label Directions <input checked="" type="checkbox"/> Attached to container		
6. Manner in Which Label is Affixed to Product <input checked="" type="checkbox"/> Lithograph Paper glued Stenciled				<input type="checkbox"/> Other _____	

Section - IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)			
Name Morris Gaskins	Title Registrations Manager	Telephone No. (Include Area Code) 229-244-3288	
<b>Certification</b> I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.			6. Date Application Received (Stamped)
2. Signature 	3. Title Registrations Manager		(Date stamp area with dotted lines)
4. Typed Name Morris Gaskins	5. Date August 29, 2007		

**CORPORATE OFFICE**

1525 NE 36th Street  
Ankeny, IA 50021  
515.964.9444 - Office  
800.247.8013 - Toll Free  
515.964.7813 - Facsimile

**ALBAUGH, INC.**

**Valdosta Office** 30f16  
P.O. Box 2127  
304 Janet Street, Suite H  
Valdosta, GA 31604  
229.244.3288 - Office  
229.244.5841 - Facsimile

FEDERAL EXPRESS

August 29, 2007

Mr. Jim Tompkins (PM 25)  
Document Processing Desk (DIST)  
Office of Pesticide Programs (7504P)  
U.S. Environmental Protection Agency  
2777 South Crystal Dr.  
Arlington, VA 22202

RE: Imazethapyr 1.8% + Glyphosate 22%  
EPA File Symbol 42750-147

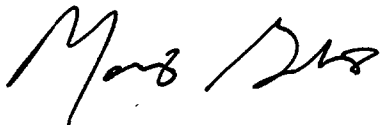
Dear Mr. Tompkins,

The enclosed submission is a notification for the above referenced registration under PR Notice 98-10 of the alternate brand name:

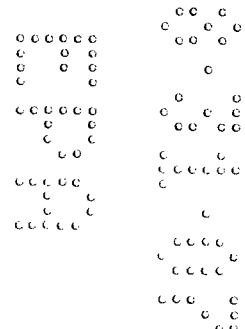
Thundermaster (42750-147)

Please call if you have any questions.

Regards,



Morris Gaskins  
Registrations Manager  
Albaugh, Inc.  
229-244-3288



PREMIER SUPPLIER OF OFF-PATENT CROP PROTECTION PRODUCTS

www.albaughinc.com

# THUNDERMASTER

FOR USE ON ROUNDUP READY® SOYBEANS

**ACTIVE INGREDIENTS:**

Imazethapyr (±)-2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-5-ethyl-3-pyridinecarboxylic acid .....	1.8%
Glyphosate: N-(phosphonomethyl) glycine, in the form of its isopropylamine salt .....	22.0%
INERT INGREDIENTS: .....	<u>76.2%</u>
TOTAL: .....	100.00%

THUNDERMASTER herbicide contains 2.17 pounds of active ingredient per gallon (0.17 pounds acid equivalent of imazethapyr and 2 pounds of glyphosate as the isopropylamine salt).

**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 this label, find someone to explain it to you in detail.)

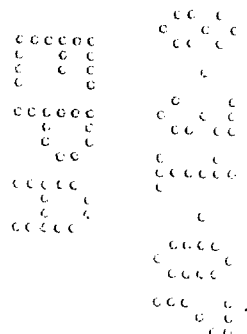
FIRST AID	
IF IN EYES:	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
IF ON SKIN OR CLOTHING:	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
IF SWALLOWED:	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to by a poison control center or doctor.</li> </ul>
<p>Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage. Have the product container or label with you when calling a poison control center or doctor or going for treatment. In case of an emergency involving this product, call CHEMTREC toll free at 1-800-424-9300.</p>	

EPA Reg. No. 42750-147

EPA Est. No. 42750-MO-001

NET CONTENTS:

Manufactured By:  
ALBAUGH, INC.  
ANKENY, IA 50021



PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

WARNING

Causes substantial but temporary eye injury. DO NOT get in eyes or on clothing. Harmful if absorbed through skin. Avoid contact with skin.

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 A on an ERA chemical-resistance category selection chart.

Applicators and other handlers must wear:

- 1. Long-sleeved shirt and long pants.
- 2. Chemical-resistant gloves, such as butyl rubber  $\geq 14$  mils, or natural rubber  $\geq 14$  mils, or neoprene rubber  $\geq 14$  mils, or nitrile rubber  $\geq 14$  mils.
- 3. Shoes plus socks.
- 4. 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 and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

<b>USER SAFETY RECOMMENDATIONS</b>
<p>Users Should:</p> <ul style="list-style-type: none"> <li>1. Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.</li> <li>2. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.</li> </ul>

ENVIRONMENTAL HAZARDS

DO NOT apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. DO NOT contaminate water when disposing of equipment washwaters.

Groundwater Advisory and Proper Handling Instructions

Imazethapyr has properties and characteristics associated with chemicals detected in groundwater. The use of imazethapyr in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

This product may not be mixed or loaded within 50 feet of any wells (including abandoned wells and drainage wells), sink holes, perennial or intermittent streams and rivers, and natural or impounded lakes or reservoirs. This setback does not apply to properly capped or plugged abandoned wells and does not apply to impervious pad 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 washwater, 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

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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.

DO NOT apply this product through any type of irrigation system.

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

### DIRECTIONS FOR USE

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

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

This labeling must be in the possession of the user at the time of herbicide application.

Not for sale or use on Long Island, New York.

### AGRICULTURAL USE REQUIREMENTS

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

DO NOT enter or allow worker entry into treated areas during the restricted entry interval (REI) of 48 hours.

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

1. Coveralls.
2. Protective eyewear.
3. Chemical-resistant gloves, such as butyl rubber  $\geq 14$  mils, or natural rubber  $\geq 14$  mils, or neoprene rubber  $\geq 14$  mils, or nitrile rubber  $\geq 14$  mils.
4. Shoes plus socks.

### STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: THUNDERMASTER herbicide is stable under conditions of freezing and thawing. Shake well before using. Keep containers closed to avoid spills and contamination.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an

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approved disposal facility.

CONTAINER DISPOSAL: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, by incineration, or, if allowed by State and local authorities by burning. If burned stay out of smoke.

### GENERAL INFORMATION

THUNDERMASTER provides burndown and residual control of many broadleaf and grassy weeds in soybeans. It can be applied to no-till soybeans as a burndown prior to planting. It may also be applied postemergence to Roundup Ready® soybeans for season-long weed control. THUNDERMASTER is effective for control of difficult weeds common to no-till production, including marestalk.

Occasionally, internode shortening and/or temporary yellowing of crop plants may occur following an THUNDERMASTER application. These effects occur infrequently and are usually temporary.

#### BURNDOWN WEED CONTROL (No-till soybeans and stale seedbed)

Apply THUNDERMASTER for burndown of weeds in no-till soybeans. It may be applied prior to planting, or preemergence of any soybean variety (including Roundup Ready or non-Roundup Ready soybeans). Add 2,4-D to the spray tank for enhanced control of perennial weeds including marestalk and hemp dogbane.

#### ROUNDUP READY SOYBEANS (glyphosate resistant)

THUNDERMASTER may also be applied for postemergence weed control in Roundup Ready soybeans. Apply THUNDERMASTER for general weed burndown and season-long control of broadleaf and grassy weeds.

For season-long control of grasses, apply Prowl® 3.3 EC herbicide prior to planting soybeans. Prowl® 3.3 EC will also enhance control of waterhemp. A postemergence application of THUNDERMASTER will control any escape weeds and provide season-long control of most broadleaf and grass weeds.

When mixing THUNDERMASTER herbicide with 2,4-D or Prowl® 3.3 EC, always use in accordance with the more restrictive label limitations and precautions. No label dosage rates should be exceeded. This product can not be mixed with any product containing a label prohibition against such mixing.

When organophosphate such as (chlorpyrifos) or carbamate insecticides are tank-mixed with THUNDERMASTER temporary injury may result to the treated crops.

NOTE: DO NOT apply THUNDERMASTER postemergence to non-glyphosate-resistant soybeans.

#### FALL APPLICATIONS IN A PLANNED SEQUENTIAL PROGRAM ON ROUNDUP READY SOYBEANS

Apply THUNDERMASTER herbicide after fall harvest and prior to ground freeze-up in the winter. Fall applications of THUNDERMASTER will control existing weeds and provide residual control of winter annual weeds and early spring germinating weeds in soybeans. Soybeans must be planted in the spring following the fall application of THUNDERMASTER. If weeds emerge in-season, other registered soybean products may be applied postemergence for weed control.

NOTE: For fall applications of THUNDERMASTER adjust the rotational crop intervals by basing the interval on the date of soybean planting rather than the date of herbicide application.

FALL OR SPRING BURNDOWN APPLICATION IN A PLANNED SEQUENTIAL PROGRAM WITH LIGHTNING® HERBICIDE APPLIED TO CLEARFIELD CORN (only in states of Kentucky, Tennessee, and south of Interstate 70 in Indiana).

THUNDERMASTER may be applied as a fall or spring burndown application prior to planting CLEARFIELD® corn and the use of Lightning® Herbicide in-crop to CLEARFIELD® corn. DO NOT apply THUNDERMASTER to emerged CLEARFIELD® corn, or crop injury will occur.

NOTE: DO NOT apply COUNTER® CR insecticide or COUNTER® 15G insecticide to acres treated with THUNDERMASTER preplant CLEARFIELD corn or crop injury may occur.

DO NOT plant wheat in the same year as application of THUNDERMASTER followed by Lightning®, unless at least 10 inches of rainfall or overhead irrigation has occurred between application of THUNDERMASTER and planting of wheat.

ATTENTION

AVOID CONTACT OF THUNDERMASTER WITH FOLIAGE OF DESIRABLE PLANTS, BECAUSE SEVERE INJURY OR PLANT DEATH MAY RESULT.

AVOID DRIFT. EXTREME CARE MUST BE USED WHEN APPLYING THIS PRODUCT TO PREVENT INJURY TO DESIRABLE PLANTS AND CROPS.

DO NOT allow the herbicide solution to drift onto desirable vegetation. Very small amounts of drift may cause injury or death to desirable crops or plants. The likelihood of injury occurring from the use of this product increases when winds are gusty. The risk of injury from this product increases when wind direction is constantly changing or during inversion conditions or other weather conditions that favor drift. Avoid applications using high spray pressure and high speed. These contribute to conditions that favor small spray droplets and drift.

RATES

BURNDOWN WEED CONTROL (No-till soybeans and stale seedbed).

Apply THUNDERMASTER at the rate of 3 pints per acre. (One gallon will treat 2.7 acres of soybeans at this rate.)

ROUNDUP READY SOYBEANS (glyphosate resistant - in crop postemergence weed control).

To minimize weed competition to the soybeans, apply to weeds 1 - 8 inches in size. Apply THUNDERMASTER at the rate of 3 pints per acre. (One gallon will treat 2.7 acres of soybeans at this rate.)

FALL APPLICATIONS IN A PLANNED SEQUENTIAL PROGRAM ON ROUNDUP READY SOYBEANS

Apply THUNDERMASTER at a rate of 3 pints per acre. (One gallon will treat 2.7 acres at this rate.)

FALL OR SPRING BURNDOWN APPLICATION IN A PLANNED SEQUENTIAL PROGRAM WITH LIGHTNING® HERBICIDE APPLIED TO CLEARFIELD® CORN (only in states of Kentucky, Tennessee, and south of Interstate 70 in Indiana).

Apply THUNDERMASTER at a rate of 3 pints per acre. (One gallon will treat 2.7 acres at this rate.)



Only one application of THUNDERMASTER may be made during the season, not to exceed 3.0 pints per acre.

MIXING INSTRUCTIONS

BURNDOWN OR POSTEMERGENCE APPLICATIONS OF THUNDERMASTER REQUIRE THE ADDITION OF A SURFACTANT AND FERTILIZER.

- 1. SURFACTANTS: Use a non-ionic surfactant containing at least 80% active ingredient. Apply the surfactant at the rate of 1 pint per 100 gallons of spray mixture (0.125% v/v of the spray mixture). Use only surfactants approved for application to growing crops.

AND

- 2. FERTILIZER: Include a fertilizer in the spray solution. Add spray grade ammonium sulfate at the rate of 8.5-17 lbs. per 100 gallons of spray solution. Use the higher rate when weeds are under moisture or temperature stress.

When mixing THUNDERMASTER, while agitating, add components in the following order:

- 1) Fill spray tank 1/2 full with clean water.
- 2) Add fertilizer.
- 3) Add THUNDERMASTER and thoroughly mix.
- 4) Add surfactant to the spray tank.
- 5) While agitating, fill the remainder of the tank with water.

DRIFT CONTROL ADDITIVES

Drift control additives may be included to either ground or aerial applications. When a drift control agent is used, read and carefully observe the precautionary statements and all other information appearing on the additive label.

To avoid injury to sensitive crops, spray equipment used for THUNDERMASTER applications must be drained and thoroughly cleaned with water before being used to apply other products.

When THUNDERMASTER herbicide is used in combination with another herbicide, refer to the respective label for rates, methods of application, proper tinning, weeds controlled, restrictions and precautions. Always use in accordance with the more restrictive label restrictions and precautions. No label dosages may be exceeded. THUNDERMASTER cannot be mixed with any product containing a label prohibiting such mixtures.

SPRAYING INSTRUCTIONS

DO NOT apply when winds are gusty, under low-level inversion conditions or under other conditions that favor drift. Maintain appropriate buffer zones between treated fields and adjacent desirable vegetation. Exposed leaves or other green tissue may be damaged or killed by drift from THUNDERMASTER.

GROUND APPLICATIONS:

Uniformly apply with property calibrated ground equipment in 10 or more gallons of water per acre. A spray pressure of 20 to 40 psi is recommended.

To ensure thorough coverage, use a minimum of 20 gallons of water per acre when applying THUNDERMASTER to minimum or no-till crops. Use higher gallonage for fields with dense vegetation or heavy crop residues. Adjust the boom height to ensure proper coverage of weed foliage (according to the

manufacturer's recommendation). Use only flat-fan nozzle tips for postemergence applications.

Avoid overlaps when spraying.

### THUNDERMASTER APPLICATIONS WITH A LOW VOLUME SPRAYER

THUNDERMASTER may be applied to soybeans with a low volume (Spra-Coupe type) sprayer. When applying THUNDERMASTER with a low volume sprayer, spray the weeds before they reach the maximum size listed in this label. Adequate control of weeds is dependent upon good spray coverage of the weeds. The sprayer must be calibrated to deliver the recommended spray volume and pressure to ensure adequate spray coverage of the weeds.

When applying THUNDERMASTER with a low volume sprayer, apply a minimum of 10 gallons per acre of spray solution with a nozzle pressure between 40-60 psi for optimum coverage. Lower nozzle pressure will minimize the potential for drift to desirable vegetation.

### AERIAL APPLICATION

Uniformly apply with properly calibrated aerial equipment in 5 or more gallons of water per acre. When applied POSTEMERGENCE, the addition of a non-ionic surfactant AND fertilizer solution are required for optimum weed control. Apply a non-ionic surfactant at the rate of 0.1 25% v/v of spray solution AND ammonium sulfate at the rate of 2.5 lb/acre. (See instructions under APPLICATION INFORMATION - POSTEMERGENCE)

To avoid injury to sensitive crops from drift, aerial applicators must adhere to the following SPECIAL AERIAL USE DIRECTIONS AND PRECAUTIONS.

- Nozzle height above ground must be a maximum of 10 feet.
- Nozzles must be pointed toward the rear of the aircraft. The downward angle of the nozzle should not be greater than 20 degrees.
- To minimize wing-tip vortex roll, nozzles or spray boom must not be located any closer to end of wing or rotor than three-fourths the distance from the center of the aircraft.
- Use a maximum spray pressure of 40 psi.
- A buffer zone must be established between the area to be sprayed and sensitive crops.
- DO NOT spray when wind velocity is greater than 5 mph. Coarse sprays (larger droplets) are less likely to drift.

Applicator is responsible for any loss or damage which results from spraying THUNDERMASTER in a manner other than specified or recommended in this label. In addition, applicator must follow all applicable state and local regulations and ordinances in regard to spraying.

## APPLICATION INFORMATION

### POSTEMERGENCE

THUNDERMASTER is effective in controlling weeds in conservation tillage as well as in conventional production systems. Apply THUNDERMASTER as a postemergence treatment. Application timing should be based on weed size and not crop growth stage. Apply THUNDERMASTER to crops and weeds that are actively growing.

A non-ionic surfactant and a nitrogen-based fertilizer must be added to the spray solution for optimum weed control activity. See the ADJUVANTS section under MIXING INSTRUCTIONS for specific instructions.

When THUNDERMASTER is applied postemergence, absorption will occur through both the roots and foliage. Susceptible weeds stop growing and either die or are not competitive with the crop. THUNDERMASTER not only controls many existing broadleaf and grass weeds when applied postemergence, it also provides control of susceptible weeds that may emerge after application.

For maximum weed control, cultivate 7 -10 days following a postemergence THUNDERMASTER application. This timely cultivation will enhance residual weed control, especially under dry conditions.

THUNDERMASTER should be applied a minimum of one hour before rainfall or overhead irrigation.

Unusually cool temperatures (50° F or less) reduce photosynthesis and transpiration and thus reduce uptake, translocation, and efficacy of THUNDERMASTER herbicide in weeds.

If air temperature has been below 50° F for 10 or more hours, delaying an THUNDERMASTER application for 48 hours after the temperature increases above 50° F, will improve weed control and reduce crop response.

**NO-TILL/MINIMUM TILLAGE AND DOUBLE CROP SOYBEANS**

THUNDERMASTER herbicide controls existing weeds and provides residual control of most weeds when applied early postemergence to soybeans in no-till or minimum tillage and double crop soybean production systems. The application may be applied either before or after emergence of the crop. (Refer to the WEEDS CONTROLLED chart for weeds controlled and recommended weed size).

The addition of Prowl® 3.3 EC herbicide in a tank-mixture with THUNDERMASTER for burndown weed control will provide season-long control of grasses and enhance control of waterhemp.

For improved burndown weed control, THUNDERMASTER may be tank-mixed with 2,4-D. Refer to the 2,4-D label for application rates and intervals between application and planting.

**BROADLEAF WEEDS CONTROLLED**  
Maximum Size (inches)

Weeds Controlled	Maximum Size (inches)
Alligator weed	5
Amaranth, Palmer	12
Anoda, spurred	3
Artichoke Jerusalem	8
Buffalobur	5
Bristly starbur	3
Buckwheat, wild	4
Burcucumber	12
Carpetweed	18
Chickweed	18
Cocklebur, common	18
Copperleaf	
Hophornbeam	2
Virginia	2
Com (volunteer- non Roundup	20
Eclipta	8

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Fleabane	
Annual	8
Hairy	8
Rough	6
Jimsonweed	6
Hemp sesbania	2
Horseweed/marestail	12
Knotweed	8
Kochia	12
Lambsquarters, common	8
Marshelder	5
Morningglory, annual	
Ipomea spp.	4
Mustard spp.	18
Nightshade	
Black	12
Eastern black	12
Hairy	12
Pigweed	
Redroot	18
Smooth	18
Spiny	18
Ragweed	
Common	9
Giant	9
Smartweed	
Ladysthumb	6
Pennsylvania	6
Spurge,	
Prostrate	12
Spotted	12
Sicklepod	3
Sunflower	18
Teaweed/prickly sida	2
Velvetleaf	5
Waterhemp	12

GRASS WEEDS CONTROLLED

Barley (volunteer)	12
Barnyardgrass	6
Crabgrass	
Large	12
Smooth	12
Cupgrass, woolly	12
Foxtail	
Giant	18
Green	18
Yellow	18
Goosegrass	5
Johnsongrass	
Seedling	12
Rhizome	12
Oats (volunteer)	12

Panicum	
Fall	12
Texas	12
Browntop	12
Red rice	4
Rye	18
Shattercane	18
Sprangletop	12
Signalgrass, broadleaf	8
Sorghum, alnum	4
Wheat (volunteer)	18
Wild oats	12

SEDGES CONTROLLED

Nutsedge	
Purple	3 <sup>1</sup>
Yellow	3 <sup>1</sup>

1 Reduced competition

ROTATIONAL CROP INSTRUCTIONS

The following rotational crops may be planted after applying THUNDERMASTER herbicide at the specified rate:

1. Anytime:

- CLEARFIELD corn seed hybrids (resistant/tolerant to Pursuit herbicide)
- Lima beans
- Peanuts
- Southern peas
- Soybeans

2. Four months after THUNDERMASTER application:

- Alfalfa
- Clover
- CLEARFIELD Wheat
- Edible beans and peas (other than lima beans and Southern peas)
- Rye (Except in North Dakota and Minnesota north of highway 210)
- Wheat

3. Eight and one-half months after THUNDERMASTER application:

- Field corn
- Field corn grown for seed

4. Nine and one-half months after THUNDERMASTER application:

- Barley

- Tobacco
5. Twelve months after THUNDERMASTER application:
- CLEARFIELD canola varieties (tolerant to Pursuit herbicide)
6. Eighteen months after THUNDERMASTER application:
- Cotton
  - Lettuce
  - Oats
  - Popcorn
  - Rye (North Dakota and Minnesota north of highway 210)
  - Safflower
  - Sorghum
  - Sunflower
  - Sweet corn
7. Twenty six months after THUNDERMASTER application:
- Flax
  - Potatoes
8. Forty months after THUNDERMASTER application:<sup>1</sup>
- All crops not listed elsewhere in these ROTATIONAL CROP INSTRUCTIONS.

<sup>1</sup> Following forty months after an THUNDERMASTER application, and before planting any crop not listed elsewhere in the ROTATIONAL CROP INSTRUCTIONS a successful field bioassay must be completed.

The field bioassay consists of a test strip of the intended rotational crop planted across the previously treated field and grown to maturity.

The test strip should include low areas and knolls, and include variations in soil such as type and pH. If no crop injury is evident in the test strip, the intended rotational crop may be planted the following year.

Sugarbeet production can be reduced when grown in soil conditions with a pH less than 6.5. If the field is limed to adjust pH prior to planting rotational crops not listed in the ROTATIONAL CROP INSTRUCTIONS, apply the lime at least 12 months prior to planting the rotational crop.

Use of THUNDERMASTER in accordance with label directions is expected to result in normal growth of rotational crops in most situations; however, various environmental and agronomic factors make it impossible to eliminate all risks associated with the use of this product and, therefore, rotational crop injury is always possible.

**EXCEPTIONS TO ROTATIONAL CROP INSTRUCTIONS**

**Wheat:**  
Wheat may be planted 3 months following a THUNDERMASTER application in areas east of interstate highway I-35.

**Sweet com and popcorn varieties:**  
(States of Iowa, Illinois, Indiana, Ohio, Wisconsin, Minnesota and Tennessee only).

Sweet corn and popcorn varieties may be planted the year following an application of

THUNDERMASTER. Some sweet corn and popcorn varieties may be injured when planted at less than 18 months following an application of THUNDERMASTER. Before planting sweet corn for processing, contact the processor company for information and recommendations regarding the tolerance of sweet corn varieties planned for fields treated with THUNDERMASTER the previous year. DO NOT plant fresh market sweet corn varieties prior to 18 months after THUNDERMASTER use. Before planting popcorn, contact the popcorn company for information and recommendations regarding the tolerance of popcorn varieties planned for fields treated with THUNDERMASTER the previous year. Since growing conditions, environmental conditions and grower practices are beyond the control of Albaugh, Inc. TO THE EXTENT ALLOWABLE BY APPLICABLE LAW, ALL RISKS AND CONSEQUENCES ASSOCIATED WITH PLANTING SWEET CORN OR POPCORN VARIETIES INTO FIELDS TREATED PREVIOUSLY WITH THUNDERMASTER SHALL BE ASSUMED BY THE USER.

Stunting and maturity delay or other adverse effects may result when sweet corn or popcorn are planted following THUNDERMASTER use.

Corn inbred lines:

Corn inbred seed lines may be planted the year following an application of THUNDERMASTER. Several seed companies have tested a wide range of inbreds for sensitivity to THUNDERMASTER soil residues and have reported good crop safety. However, due to the proprietary nature of seed production, ALBAUGH, INC. has not been given access to the inbred data. Growers are directed to contact the seed company for information and recommendations regarding the planting of corn grown for seed in fields treated with THUNDERMASTER herbicide the previous year. Since growing conditions, environmental conditions and grower practices are beyond the control of ALBAUGH, INC., to the extent permitted by applicable law, all risks and consequences associated with planting seed corn inbreds into fields treated previously with THUNDERMASTER shall be assumed by the user.

Certain vegetable crops:

(States of New Jersey, Virginia, North Carolina, South Carolina, Georgia, Alabama, Florida, Delaware, Maryland, Pennsylvania, Kentucky and Indiana only).

The following crops may be planted 18 months following the last application of THUNDERMASTER: Bahiagrass, cabbage, cantaloupe, cucumber, Irish potato, onion, sweet potato transplants, sweet pepper transplants, tomato transplants, and watermelon.

Barley:

(States of Indiana, Ohio, Kentucky, Pennsylvania, New Jersey, Delaware, Virginia and Maryland only).

Barley may be planted 4 months following an THUNDERMASTER application in these states.

PRECAUTIONS

If soybeans are furrow irrigated, till the soil prior to planting winter wheat or barley. The beds should be broken up and the soil mixed with tillage equipment set to cut 4-6 inches deep.

There must be an interval of at least 85 days between an application of THUNDERMASTER and soybean harvest.

THUNDERMASTER applications must be made before soybean bloom.

Make only one application of THUNDERMASTER per soybean growing season.

DO NOT graze or feed treated soybean forage, hay or straw to livestock.

### Conditions of Sale and Warranty

The Directions For Use of this product reflects the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or use of the product in a manner inconsistent with its labeling, all of which are beyond the control of ALBAUGH, INC. or the Seller. To the extent allowable by applicable law, all such risks shall be assumed by the Buyer.

ALBAUGH, INC. warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the Directions For Use, subject to the inherent risks, referred to above.

ALBAUGH, INC. MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY. TO THE EXTENT PERMITTED BY LAW, ALBAUGH, INC. AND THE SELLER DISCLAIM ANY LIABILITY FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT. ALBAUGH, INC. and the Seller offer this product, and the Buyer and User accept it, subject to the foregoing "conditions of Sale and Warranty which may be varied only by agreement in writing signed by a duly authorized representative of ALBAUGH, INC..

#### Uses With Other Products (Tank-mixes)

If this product is used in combination with any other product except as specifically recommended in writing by ALBAUGH, INC., then ALBAUGH, 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 ALBAUGH, INC., to the extent allowable by applicable law, the liability of ALBAUGH, INC. shall in no manner extend to any damage, loss or injury not directly caused by the inclusion of the ALBAUGH, INC. product in such combination use, and to the extent allowable by applicable law, in any event shall be limited to return of the amount of the purchase price of the ALBAUGH, INC. product.

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Roundup Ready Soybeans is a registered trademark of Monsanto Company.