

83222-29

05-20-2010

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

MAY 20 2010

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

Ms Jane M. Miller  
Agent  
J. Oliver Products, LLC  
c/o Biologic, Inc  
115 Obtuse Hill Road  
Brookfield, CT 06804

Dear Ms. Miller:

Subject: Unity Tankmix Herbicide  
EPA Registration No. 83222-29  
Your Application and Letter Dated May 5, 2010,  
Request to Amend Labeling by Notification, To  
Change the Primary Brand Name To: Unite Tankmix  
Herbicide

This Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 dated May 5, 2010 for the product Unity Tankmix Herbicide. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action requested falls within the scope of PRN 98-10. The label submitted with the application has been stamped "Notification" and will be placed in the records for this pesticide product registration.

If you have any question, please call me directly at 703-305-5697.

Sincerely yours,

A handwritten signature in black ink, appearing to read "James Tompkins".

James Tompkins  
Product Manager (25)  
Herbicide Branch  
Registration Division (7505P)



United States  
Environmental Protection Agency  
Washington, DC 20460

<input type="checkbox"/>	Registration
<input type="checkbox"/>	Amendment
<input checked="" type="checkbox"/>	Other

OPP Identifier Number

### Application for Pesticide - Section I

1. Company/Product Number 83222-29	2. EPA Product Manager J. Tompkins	3. Proposed Classification <input type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) Unity Tankmix Herbicide	PM# 25	
5. Name and Address of Applicant (Include ZIP Code) J. Oliver Products, LLC c/o Biologic, Inc. 115 Obtuse Hill Road Brookfield, CT 06804 <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.)

This is a notification to change the primary brand name from "Unity Tankmix Herbicide" to "Unite Tankmix Herbicide" as per PR Notice 98-10. This notification is consistent with the provisions of PR Notice 98-10 and the EPA regulations at 40 CFR 152.46, and no other 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 may be subject to enforcement action and penalties under sections 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 type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Metal	<input type="checkbox"/> Plastic
* Certification must be submitted		If "Yes" Unit Packaging wgt.	No. per container	<input type="checkbox"/> Glass	<input type="checkbox"/> Paper
		If "Yes" Package wgt	No. per container	<input type="checkbox"/> Other (Specify) _____	
3. Location of Net Contents Information <input type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container		5. Location of Label Directions <input type="checkbox"/>	
6. Manner in Which Label is Affixed to Product <input type="checkbox"/> Lithograph <input type="checkbox"/> Paper glued <input type="checkbox"/> 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 Jane M. Miller	Title Agent	Telephone No. (Include Area Code) (203) 740-1200
<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 Agent	
4. Typed Name Jane M. Miller	5. Date May 5, 2010	

May 5, 2010

Document Processing Desk (NOTIF)  
Office of Pesticide Programs (7504P)  
US Environmental Protection Agency  
One Potomac Yard  
2777 S. Crystal Drive  
Room S-4900, 4<sup>th</sup> Floor  
Arlington, VA 22202

Attention: Mr. James Tompkins (PM #25)

RE: "Unity Tankmix Herbicide", EPA Reg. No. 83222-29  
Notification to Change the Primary Brand Name

Dear Mr. Tompkins:

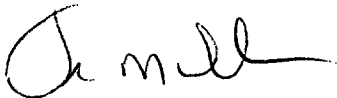
On behalf of J. Oliver Products, LLC please find enclosed an Application for Pesticide Notification to change the primary brand name of "Unity Tankmix Herbicide", EPA Reg. No. 83222-29 to "**Unite Tankmix Herbicide.**"

The following documents are enclosed to process this Notification:

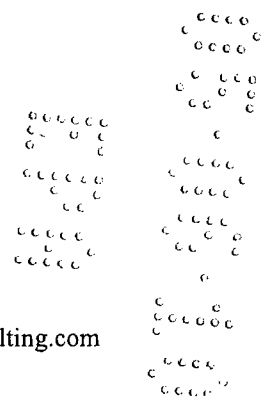
1. Application for Pesticide Notification (8570-1)
2. One (1) copy of the proposed label with the new brand name.

Should you have any questions, or wish to reach me, please feel free to contact our office at 203-740-1200.

Sincerely,



Jane Miller  
Agent to J. Oliver Products, LLC



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# Unite Tankmix Herbicide

FOR USE ON WHEAT, BARLEY, TRITICALE, FALLOW AND  
AS A PRE-PLANT OR POST-HARVEST BURNDOWN HERBICIDE

**ACTIVE INGREDIENTS:**

Thifensulfuron-methyl		
Methyl 3-[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)amino]carbonyl]amino]sulfonyl]-2-thiophenecarboxylate .....		40.0%
Tribenuron-methyl		
Methyl 2-[[[N-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)methylamino]carbonyl]amino]sulfonyl]benzoate .....		10.0%
<b>OTHER INGREDIENTS:</b> .....		50.0%
	<b>TOTAL</b> .....	100.0%

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

SEE INSIDE BOOKLET FOR FIRST AID AND ADDITIONAL PRECAUTIONARY STATEMENTS.

For Chemical Spill, Leak, Fire, or Exposure, Call CHEMTREC (800) 424-9300  
For Medical Emergencies Only, Call 800-222-1222

**NOTIFICATION**

**MAY 20 2010**

EPA REG. NO. 83222- 29  
EPA EST. NO. 87431-KS-001

NET CONTENTS: 48 oz.

Manufactured for:  
J. Oliver Products, LLC  
3187 Robertson Gin Road  
Hernando, MS 38632

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

Causes moderate eye irritation. Avoid contact with eyes or clothing. Wear protective eyewear.

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Some of the materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for Category A 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 any waterproof material such as polyethylene or polyvinyl chloride.
- Shoes plus socks.
- Protective eyewear.

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.

**Engineering Controls Statement:** 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.

**Important:** When reduced PPE is worn because a closed system is being used, handlers must be provided all PPE specified above for "Applicators and Other Handlers" and have such PPE immediately available for use in an emergency, such as a spill or equipment breakdown.

**USER SAFETY RECOMMENDATIONS**

**Users Should:**

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

**FIRST AID**

- IF IN EYES:**
- 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.
  - Call a poison control center or doctor for treatment advice.

**HOTLINE**

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-222-1222 for emergency medical treatment information.

**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 cleaning equipment or disposing of equipment wash waters. Do not apply where/when conditions favor runoff.

**PESTICIDE HANDLING**

- Calibrate sprayers only with clean water away from the well site.
- Make scheduled checks of spray equipment.
- Assure accurate measurement of pesticides by all operation employees.
- Mix only enough product for the job at hand.
- Avoid over-filling of spray tank.
- Do not discharge excess material on the soil at a single spot in the field/grove or mixing/loading station.
- Dilute and agitate excess solution and apply at labeled rates/uses.
- Avoid storage of pesticides near well sites.
- When triple rinsing the pesticide container, be sure to add the rinsate to the spray mix.

**USE INFORMATION**

This product can be used in a tank mix with other suitable registered herbicides to provide selective postemergence control of certain broadleaf weeds in wheat (including durum), barley, triticale, post-harvest burndown, pre-plant burndown and fallow. This product is a soluble granule to be mixed in water or other recommended carrier and applied as a uniform broadcast spray. It is noncorrosive, nonflammable, nonvolatile and does not freeze.

## BIOLOGICAL ACTIVITY AND ENVIRONMENTAL CONDITIONS

Best results are obtained when this product is applied to young, actively growing weeds. The specified use rate will depend on weed spectrum and size of weed at time of application. The degree of control and duration of effect are dependent on rate used, sensitivity and size of target weed and environmental conditions at the time of and following application. This product stops growth of susceptible weeds rapidly. However, typical symptoms of dying weeds (discoloration) may not be noticeable for 1-3 weeks after application (2-5 weeks for wild garlic, when present) depending on the environmental conditions and weed susceptibility. Warm, moist conditions following treatment promote the activity of this product, while cold, dry conditions delay the activity. Weeds hardened-off by cold weather or drought stress will be less susceptible.

A vigorous growing crop will aid weed control by shading and providing competition for weeds. However, a dense crop canopy at time of application can intercept spray and result in reduced weed control. Weeds may not be adequately controlled in areas of thin crop stand or seeding skips.

Applications made to weeds that are in the cotyledon stage, larger than the size indicated, or to weeds under stress may result in unsatisfactory control.

This product may injure crops that are stressed from adverse environmental conditions (such as extreme temperatures or moisture), abnormal soil conditions, or cultural practices. In addition, different varieties of the crop may have differing levels of sensitivity to treatment with this product under otherwise normal conditions.

Treatment of sensitive crop varieties may injure crops. To reduce the potential of crop injury, tank mix this product with 2,4-D (ester formulations perform best – see "TANK MIXTURES" section of this label) and apply after the crop is in the tillering stage of growth.

Weed control may be reduced if rainfall or snowfall occurs soon after application. Several hours of dry weather are needed to allow this product to be sufficiently absorbed by weed foliage.

## 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.

### 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 12 hours.

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

- Coveralls
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks.

This product must be used only in accordance with instructions on this label or in separately published J. Oliver Products, LLC instructions.

J. Oliver Products, LLC will not be responsible for losses or damages resulting from the use of this product in any manner not in accordance with instructions on this label.

This product is registered for use on wheat, barley, triticale, post-harvest burndown, pre-plant burndown and fallow in most states. Check with your state extension service or Department of Agriculture before use, to be certain this product is registered in your state.

## APPLICATION TIMING

### WHEAT (INCLUDING DURUM), BARLEY, AND TRITICALE

Make applications after the crop is in the 2-leaf stage, but before the flag leaf is visible. Do not harvest within 45 days of the last application.

### PRE-PLANT BURNDOWN

For burndown of emerged weeds, broadcast applications of this product may be applied up through planting, but before wheat (including durum), barley, or triticale plants emerge. Apply this product as a burndown treatment to sugarbeets, winter rape, and canola fields at least 60 days prior to planting. Apply this product as a burndown treatment before planting any other crop (such as soybeans and field corn, cotton, rice, or grain sorghum) at least 45 days prior to planting. (See the "CROP ROTATION" section of this label for additional information.)

### POST HARVEST

This product may be used as a burndown treatment to crop stubble when the majority of weeds have emerged and are actively growing. (See the "CROP ROTATION" section of this label for additional information.)

**FALLOW**

Apply this product in the spring or fall when the majority of weeds have emerged and are actively growing. Generally, such applications are made in the spring or fall when most cereal applications are made. (See the "CROP ROTATION" section of this label for additional information.)

**USE RATES**

Unless otherwise instructed by J. Oliver Products, LLC, do not use less than 0.6 ounce of this product per acre.

**WHEAT, BARLEY AND TRITICALE**

Apply 0.6 to 1.0 ounce of this product per acre in a tank mix with other suitable registered herbicides. Refer to the "APPLICATION TIMING", "TANK MIXTURES", "USE INFORMATION", and weeds controlled sections of this label for additional information.

Sequential treatments of this product may be made provided the total amount of this product applied to the crop does not exceed 1.8 ounces per acre.

**PRE-PLANT BURNDOWN**

Apply 0.6 to 1.0 ounce of this product per acre as a burndown treatment prior to planting any crop; or shortly after planting, but prior to emergence of, wheat (including durum), barley, or triticale. (See the "APPLICATION TIMING" section of this label for restrictions on planting intervals.)

This product may be applied in combination with other suitable registered preplant burndown herbicides. (See the "TANK MIXTURES" section of this label for additional information.)

Sequential treatments of this product may also be made provided the total amount of this product applied during one fallow/preplant season does not exceed 1.8 ounces per acre.

**POST HARVEST AND FALLOW**

Apply 0.6 to 1.0 ounce of this product per acre as a postemergence fallow treatment, in combination with other suitable registered fallow herbicides. (See the "TANK MIXTURES" section of this label for additional information.)

Sequential treatments of this product may be made provided the total amount of this product applied to the crop does not exceed 1.8 ounces per acre.

**SPRAY ADJUVANTS**

Include a spray adjuvant with applications of this product. An ammonium nitrogen fertilizer may also be used. Do not use low rates of liquid nitrogen fertilizer solution as a substitute for a surfactant. Always use a surfactant, unless otherwise recommended. Antifoaming agents may be used if needed.

Consult your Ag dealer or applicator, local J. Oliver Products, LLC fact sheets and technical bulletins prior to using an adjuvant system. Select adjuvants that are authorized for use with all products in this product tank mix. Products must contain only EPA-exempt ingredients (40CFR 1001).

**NONIONIC SURFACTANT (NIS)**

- Apply 0.25 to 0.50% volume/volume (2 pints to 4 pints per 100 gal of spray solution).
- Surfactant products must contain at least 60% nonionic surfactant with a hydrophilic/lipophilic balance (HLB) greater than 12. (See the "TANK MIXTURES" section of this label for additional information.)

**CROP OIL CONCENTRATE (COC) - PETROLEUM OR MODIFIED SEED OIL (MSO)**

- Apply at least 1% v/v (1 gal per 100 gal spray solution), or 2% under arid conditions. MSO adjuvants may be used at 0.5% v/v if specified on local J. Oliver Products, LLC product literature or service policies.
- Oil adjuvants must contain at least 80% high-quality, petroleum (mineral) or modified vegetable-seed oil with at least 15% surfactant emulsifiers.

**SPECIAL ADJUVANT TYPES**

- Combination adjuvant products may be used at doses that provide the required amount of NIS, COC, MSO and/or ammonium nitrogen fertilizer. Consult product literature for use rates and restrictions.
- In addition to the adjuvants specified above, other adjuvant types may be used if they provide the same functionality and have been evaluated and approved by J. Oliver Products, LLC product management. Consult separate J. Oliver Products, LLC technical bulletins for detailed information before using adjuvant types not specified on this label.

**AMMONIUM NITROGEN FERTILIZER**

- Use 2 qt/acre of a high-quality urea ammonium nitrate (UAN) with a surfactant, such as 28%N or 32%N, or 2 lb/acre of a spray-grade ammonium sulfate (AMS), with a surfactant. Use 4 qt/acre UAN or 4 lb/acre AMS under arid conditions.

**WEEDS CONTROLLED WHEN TANK MIXED WITH BROMOXNYL CONTAINING PRODUCTS**

(Such as Buctril, Bison, Bronate or Bronate Advanced or Rhino)

Annual knawel	Cow cockle	London rocket	Spiny pigweed
Annual sowthistle	Cress (mouse-ear)	Mallow (little)	Stinking mayweed/Dogfennel
Black mustard	Cutleaf nightshade	Marshelder	Swinecress
Black nightshade	Curly dock	Miners lettuce	Tall morningglory
Bushy wallflower/Treacle mustard	Eastern black nightshade	Mouse-ear chickweed	Tall waterhemp
Carolina geranium	False chamomile	Pennsylvania smartweed	Tansymustard
Coast fiddleneck	Field pennycress	Pepperweed species	Tartary buckwheat
Common buckwheat	Flixweed	Prickly lettuce*‡	Tarweed fiddleneck
Common chickweed*	Fumitory	Prostrate knotweed	Tumble/Jim Hill mustard
Common cocklebur	Giant ragweed	Puncturevine	Velvetleaf
Common groundsel	Green smartweed	Redmaids	Volunteer canola
Common lambsquarters	Hemp sesbania	Redroot pigweed	Volunteer lentils
Common ragweed	Henbit	Russian thistle*‡	Volunteer peas
Common sunflower*	Horned poppy	Scentless chamomile/ mayweed	Volunteer sunflower*
Common tarweed	Ivyleaf morningglory	Shepherd's-purse	Wild buckwheat
Corn chamomile	Jimsonweed	Silverleaf nightshade	Wild chamomile
Corn groundsel	Kochia *‡	Small flower buttercup	Wild mustard
Corn spurry	Ladysthumb	Smooth pigweed	Wild radish
	Lanceleaf sage		Yellow rocket

**PARTIAL CONTROL\*\***

Common mallow	Cutleaf evening primrose	Marestail
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\* See SPECIFIC WEED PROBLEMS for more information.

\*\* Partial control: A visual reduction of weed population as well as a significant loss of vigor for individual weed plants. For better results, use 6 ounces active ingredient per acre of bromoxnyl-containing herbicide (such as "Bronate" or "Bison" at 1.5 pints per acre - refer to the "USE RATES" section of this label).

‡ Naturally-occurring resistant biotypes of kochia, prickly lettuce, and Russian thistle are known to occur. See the "TANK MIXTURES" and "SPECIFIC WEED PROBLEMS" sections of this label for additional details.

**WEEDS CONTROLLED WHEN TANK MIXED WITH 2,4-D-CONTAINING PRODUCTS**

(Such as Agri-Star, Barrage, Omni-Amine or Weedar 64)

Annual knawel	Corn chamomile	Mallow (little)	Smooth pigweed
Annual sowthistle	Corn spurry	Marshelder	Spiny pigweed
Black mustard	Cow cockle	Miners lettuce	Stinking mayweed/Dogfennel
Bushy wallflower/Treacle mustard	Cress (mouse-ear)	Mouse-ear chickweed	Swinecress
Carolina geranium	Cutleaf nightshade	Pennsylvania smartweed	Tansymustard
Coast fiddleneck	Curly dock	Pepperweed species	Tarweed fiddleneck
Common buckwheat	False chamomile	Prickly lettuce*‡	Tumble/Jim Hill mustard
Common cocklebur	Field pennycress	Prostrate knotweed	Velvetleaf
Common groundsel	Flixweed	Puncturevine	Volunteer canola
Common lambsquarters	Giant ragweed	Redmaids	Volunteer lentils
Common mallow	Green smartweed	Redroot pigweed	Volunteer peas
Common purselane	Henbit	Russian thistle*‡	Volunteer sunflower*
Common sunflower*	Ivyleaf morningglory	Scentless chamomile/ mayweed	Wild buckwheat
Common ragweed	Kochia *‡	Shepherd's-purse	Wild chamomile
Common tarweed	Ladysthumb	Small flower buttercup	Wild mustard
	London rocket		Wild radish

**PARTIAL CONTROL\*\***

Corn groundsel	Hemp sesbania	Tall morningglory
Fumitory	Marestail	Tall waterhemp

\* See SPECIFIC WEED PROBLEMS for more information.

\*\* Partial control: A visual reduction of weed population as well as a significant loss of vigor for individual weed plants. For better results, use higher specified rates 2,4-D containing herbicides (such as Barrage or Agri-Star - refer to the "USE RATES" sections of these labels).

‡ Naturally-occurring resistant biotypes of kochia, prickly lettuce, and Russian thistle are known to occur. See the "TANK MIXTURES" and "SPECIFIC WEED PROBLEMS" sections of this label for additional details.



## WEEDS CONTROLLED WHEN TANK MIXED WITH 2,4-D + DICAMBA-CONTAINING PRODUCTS

(Such as Banvel, Banvel + 2,4-D or Clarity)

Annual knawel	Cow cockle	Miners lettuce	Swinecress
Annual sowthistle	Cress (mouse-ear)	Mouse-ear chickweed	Tall morningglory
Black mustard	Cutleaf nightshade	Pennsylvania smartweed	Tall waterhemp
Bushy wallflower/Treacle mustard	Curly dock	Pepperweed species	Tansymustard
Carolina geranium	False chamomile	Prickly lettuce*‡	Tarweed fiddleneck
Coast fiddleneck	Field pennycress	Prostrate knotweed	Tumble/Jim Hill mustard
Common buckwheat	Flixweed	Puncturevine	Velvetleaf
Common cocklebur	Fumitory	Redmaids	Volunteer canola
Common groundsel	Giant ragweed	Redroot pigweed	Volunteer lentils
Common lambsquarters	Green smartweed	Russian thistle*‡	Volunteer peas
Common mallow	Hemp sesbania	Scentless chamomile/mayweed	Volunteer sunflower*
Common purselane	Henbit	Shepherd's-purse	Wild buckwheat
Common sunflower*	Ivyleaf morningglory	Small flower buttercup	Wild chamomile
Common ragweed	Kochia *‡	Smooth pigweed	Wild mustard
Common tarweed	Ladysthumb	Spiny pigweed	Wild radish
Corn chamomile	London rocket	Stinking mayweed/Dogfennel	
Corn spurry	Mallow (little)		
	Marshelder		

### PARTIAL CONTROL\*\*

Canada thistle	Corn groomwell	Marestail	Spiny pigweed
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\* See SPECIFIC WEED PROBLEMS for more information.

\*\* Partial control: A visual reduction of weed population as well as a significant loss of vigor for individual weed plants. For better results, use higher specified rates 2,4-D and or dicamba-containing herbicides (such as "Barrage", "Agri-Star", "Banvel", "Banvel SFG" or "Clarity" - refer to the "USE RATES" sections of these labels).

‡ Naturally-occurring resistant biotypes of kochia, prickly lettuce, and Russian thistle are known to occur. See the "TANK MIXTURES" and "SPECIFIC WEED PROBLEMS" sections of this label for additional details.

## WEEDS CONTROLLED WHEN TANK MIXED WITH FLUROXYPYR-CONTAINING PRODUCTS

(Such as Starane, Starane + Saber, Starane + Sword or Starane + Salvo)

Annual knawel	Common sunflower ***	Morningglory species ***	Tarweed fiddleneck
Annual sowthistle	Corn chamomile	Mouse-ear chickweed	Tumble/Jim Hill mustard
Bedstraw (cleavers) ***	Corn spurry	Pennsylvania smartweed	Velvetleaf ***
Black mustard	Cress (mouse-ear)	Prickly lettuce *** ‡	Venice mallow ***
Bushy wallflower/Treacle mustard	Curly dock	Prostrate knotweed	Volunteer canola
Carolina geranium	False chamomile	Puncturevine ***	Volunteer flax ***
Coast fiddleneck	Field pennycress	Redmaids	Volunteer lentils
Coffeeweed ***	Flixweed	Redroot pigweed	Volunteer peas
Common buckwheat	Green smartweed	Russian thistle * ‡	Volunteer sunflower *
Common chickweed ***	Hemp dogbane ***	Scentless chamomile/mayweed	Wild buckwheat
Common cocklebur ***	Kochia * ‡	Shepherd's-purse	Wild chamomile
Common groundsel	Ladysthumb	Small flower buttercup	Wild mustard
Common lambsquarters	London rocket	Stinking mayweed/Dogfennel	White clover ***
Common purslane ***	Mallow (little)	Swinecress	
Common ragweed ***	Marshelder	Tansymustard	
	Miners lettuce		

### PARTIAL CONTROL\*\*

Black nightshade	Eastern black nightshade	Henbit	Silverleaf nightshade
Common mallow	Field Bindweed	Marestail	Volunteer potato §
Cutleaf nightshade	Field horsetail		

\* See SPECIFIC WEED PROBLEMS for more information.

\*\* Partial control: A visual reduction of weed population as well as a significant loss of vigor for individual weed plants. Use 1 -1/2 - 2 ounces active ingredient per acre of fluroxypyr-containing herbicide (such as "Starane" at 1/2 - 2/3 pint per acre - refer to the "USE RATES" section of this label).

\*\*\* Use 1-1/2 -2 ounces active ingredient per acre fluroxypyr containing herbicides (such as "Starane" at 1/2 - 2/3 pint per acre).

‡ Naturally-occurring resistant biotypes of kochia, prickly lettuce and Russian thistle are known to occur. See the "TANK MIXTURES" and "SPECIFIC WEED PROBLEMS" sections of this label for additional details.

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§ Use 2 - 4 ounces active ingredient per acre fluroxypyr-containing herbicides (such as "Starane" at 1-1/3 pints per acre). See specific fluroxypyr-containing herbicide label for application rates and precautions.

### SPECIFIC WEED PROBLEMS

**Common chickweed:** For best results, apply a minimum of 6 ounces active ingredient per acre of a bromoxynil-containing herbicide (such as Bronate or Bison at 1-1/2 pints per acre) when all or the majority of weeds have germinated and are past the cotyledon stage. Weeds should be less than 3 inches tall or across at the time of this product's application.

For best results, apply a minimum of 1-1/2 ounces active ingredient per acre of a fluroxypyr-containing herbicide (such as "Starane" at 1/2 pint per acre) when all or the majority of weeds have germinated and are past the cotyledon stage. Weeds should be less than 3 inches tall or across at the time of this product's application.

**Kochia:** Naturally occurring biotypes resistant to this product are known to occur.

For best results, apply a minimum of 6 ounces active ingredient per acre of a bromoxynil-containing herbicide (such as Bronate or Bison at 1-1/2 pints per acre) when kochia are less than 2" tall and are actively growing. For improved control of Kochia (2-4" tall) this product and bromoxynil-containing herbicides may be tank mixed with 1/3 to 2/3 pint per acre of Starane.

For best results, apply a minimum of 1 ounce active ingredient per acre of a fluroxypyr-containing herbicide (such as Starane at 1/3 pint per acre) when kochia are less than 2" tall and are actively growing.

**Prickly lettuce:** Naturally occurring biotypes resistant to this product are known to occur. For best results, this product tank mixed a minimum of 1-1/2 ounces active ingredient per acre of fluroxypyr-containing herbicide (such as "Starane" at 1/2 pint per acre) should be applied in the spring when prickly lettuce are 2" to 4" across and are actively growing.

**Russian Thistle:** Naturally occurring biotypes resistant to this product are known to occur. This product should be applied in the spring when Russian thistles are less than 2" tall and are actively growing.

For suppression, this product tank mixed with a minimum of 1-1/2 ounces active ingredient per acre of a fluroxypyr-containing herbicide (such as Starane at 1/2 pint per acre) should be applied in the spring when Russian thistles are less than 2" tall and are actively growing.

For best results, apply a minimum of 6 ounces active ingredient per acre of a bromoxynil containing herbicide (such as Bronate or Bison at 1-1/2 pints per acre) when all or the majority of weeds have germinated. Weeds should be less than 2" tall or across at the time of this product's application.

For best results, this product tank mixed with a minimum of 1-1/2 ounces active ingredient per acre of a fluroxypyr and 2,4-D or MCP containing herbicide (such as Starane + Saber at 1-1/2 pints per acre, Starane + Sword at 1-1/8 pints per acre or Starane + Salvo at 1 pint per acre) should be applied in the spring when Russian thistle are less than 2" tall and are actively growing.

**SU /Clearfield Tolerant Volunteer Sunflowers:** For suppression, apply a minimum of 1-1/2 ounces active ingredient per acre of a fluroxypyr-containing herbicide (such as "Starane" at 1/2 pint per acre).

For best results, apply a minimum of 6 ounces active ingredient per acre of a bromoxynil-containing herbicide (such as Bronate or Bison at 1-1/2 pints per acre). Delay application until first sunflower seedlings emerging are 4 inches in height.

For best results, this product tank mixed with a minimum of 1-1/2 ounces active ingredient per acre of a fluroxypyr and 2,4-D or MCP containing herbicide (such as Starane + Saber at 1-1/2 pints per acre, Starane + Sword at 1-1/8 pints per acre or Starane + Salvo at 1 pint per acre) should be applied in the spring when SU/Clearfield tolerant volunteer sunflowers are less than 2" tall and are actively growing.

### ADDITIONAL TANK MIXTURES WITH BROMOXINYL, FLUROXYPYR OR 2,4-D-CONTAINING PRODUCTS

Read and follow all manufacturers' label instructions for any companion herbicides, fungicides, and/or insecticides. If those instructions conflict with this label, do not tank mix that product with this product. Read and follow all label instructions on timing, precautions, and warnings for any companion products before using these tank mixtures. Follow the most restrictive labeling.

In wheat, barley and triticale, this product may be tank mixed with other suitable registered herbicides to control weeds listed as partially controlled, weeds resistant to this product or weeds not listed under the "WEEDS CONTROLLED" sections of this label.

#### 2,4-D (AMINE OR ESTER) OR MCP (AMINE OR ESTER)

This product may be tank mixed with the amine and ester formulations of 2,4-D and MCP herbicides for use on wheat, barley, or fallow.

For best results in the Red River Valley and adjacent areas of North Dakota and Minnesota, add the ester formulations of 2,4-D or MCP herbicides to the tank at 3/8 lb active ingredient (such as 3/4 pint of a 4 lb/gal product, 1/2 pint of a 6 lb/gal product). No additional surfactant is needed with this mixture.

For best results in other areas, add the ester formulations of 2,4-D or MCP herbicides to the tank at 1/4 to 3/8 lb active ingredient (such as 1/2 to 3/4 pint of a 4 lb/gal product, 1/3 to 1/2 pint of a 6 lb/gal product). Nonionic surfactant may be added to the mixture at 1/2 to 1 quart per 100 gal of spray solution (0.125 to 0.25% v/v); however, adding nonionic surfactant may increase the potential for crop injury, especially at the higher phenoxy rates. Higher rates of 2,4-D or MCP may be used, but do not exceed the highest rate allowed by those respective labels.

#### WITH DICAMBA (SUCH AS BANVEL / BANVEL SGF / CLARITY)

This product may be tank mixed with 1/16 to 1/8 lb active ingredient dicamba (such as 2 to 4 fluid ounces of Banvel, 4 to 8 fluid

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ounces of Banvel SGF, or 2 to 4 fluid ounces of Clarity). Use higher specified rates when weed infestation is heavy. Nonionic surfactant may be added to the mixture at 1/2 to 1 quart per 100 gal of spray solution (0.125 to 0.25% v/v); however, adding nonionic surfactant may increase the potential for crop injury. Refer to the specific dicamba label for application timing and restrictions. Tank mixes of this product plus dicamba may result in reduced control of some broadleaf weeds.

#### **WITH 2,4-D OR MCP (AMINE OR ESTER) AND BANVEL / CLARITY**

This product may be applied in a 3-way tank mix with formulations of dicamba and 2,4-D or MCP. Make application of this product plus 1/16 to 1/8 lb active ingredient dicamba (such as 2 to 4 fluid ounces of "Banvel", 4 to 8 fluid ounces of "Banvel" SGF, or 2 to 4 fluid ounces of Clarity) plus 1/4 to 3/8 lb active ingredient 2,4-D or MCP ester or amine per acre. Use higher specified rates when weed infestation is heavy. Nonionic surfactant may be added to the mixture at 1/2 to 1 quart per 100 gal of spray solution (0.125 to 0.25% v/v); however, adding nonionic surfactant may increase the potential for crop injury. Apply this three-way combination to winter wheat after the crop is tillering and prior to jointing (first node).

In spring wheat (including Durum), apply after the crop is tillering and before it exceeds the 5-leaf stage.

In spring barley, apply after the crop is tillering and before it exceeds the 4-leaf stage.

#### **WITH BROMOXNYL CONTAINING PRODUCTS (SUCH AS BUCTRIL, BISON, BRONATE, BRONATE ADVANCED OR RHINO)**

This product may be tank mixed with bromoxynil-containing herbicides registered for use on wheat, barley or triticale. For best results, add bromoxynil-containing herbicides to the tank at 6 to 12 oz active ingredient per acre (such as Bronate or Bison at 3/4 to 1-1/2 pt per acre). Tank mixes of this product plus bromoxynil may result in reduced control of Canada thistle.

#### **WITH STARANE, STARANE + SALVO, STARANE + SWORD**

This product may be tank mixed with 1/3 to 2/3 pint per acre of Starane, 2/3 to 1-1/3 pints per acre of Starane + Salvo, 3/4 to 1-1/2 pints per acre of Starane + Sword. 2,4-D and MCP herbicides (preferably ester formulations) may be tank mixed with this product plus Starane. Consult local recommendations and the "TANK MIXTURES" section of this label for additional information.

#### **WITH MAVERICK**

This product can be tank mixed with "Maverick" herbicide for improved control of grassy weeds in wheat.

This product and a bromoxynil-containing herbicide (such as Bronate or Bison at 3/4 to 1 pint per acre) may be tank mixed with 2/3 ounce per acre of Maverick herbicide for control of grassy weeds in wheat. This tank mix may also include Starane for greater spectrum of broadleaf control - see the "Maverick" label for specific use directions and restrictions. Apply 0.5% volume/volume (4 pints per 100 gal of spray solution) of non-ionic surfactant (NIS) with this tank mix. Some reduction in annual grass control may occur when optimum environmental conditions do not occur for several days prior to and after application - such as low moisture conditions, high and low temperatures, low humidity.

This product and a fluroxypyr-containing herbicide (such as Starane, Starane + Saber, Starane + Sword or Starane + Salvo) may be tank mixed with 2/3 ounce per acre of Maverick herbicide for control of grassy weeds in wheat. Tank mixtures with herbicides formulated as amines may decrease the effectiveness of Maverick herbicide. Apply 0.5% volume/volume (4 pints per 100 gal of spray solution) of nonionic surfactant (NIS) with this tank mix. Some reduction in annual grass control may occur when optimum environmental conditions do not occur for several days prior to and after application - such as low moisture conditions, high and low temperatures, low humidity.

#### **WITH AIM**

This product can be tank mixed with Aim herbicide for improved control of weeds in wheat and barley.

#### **WITH STINGER, CURTAIL, CURTAIL M OR WIDEMATCH**

This product can be tank mixed with Stinger, Cutback or Cutback M herbicide for improved control of weeds in wheat and barley.

This product and fluroxypyr containing herbicides (such as Starane, Starane + Saber, Starane + Sword or Starane + Salvo) may be tank mixed with Stinger or Cutback herbicide for improved control of weeds in wheat and barley.

This product may be tank mixed with 2/3 pint per acre of Widematch.

#### **WITH ASSERT HERBICIDE**

This product can be tank mixed with Assert. When tank mixing this product with Assert, always include another broadleaf weed herbicide with a different mode of action (for example 2,4-D ester, MCP ester, or bromoxynil - such as Buctril, Bison, Bronate or Bronate Advanced). Applications of this product plus "Assert" may cause temporary crop discoloration, stunting, or injury when heavy rainfall occurs shortly after application.

This product and fluroxypyr-containing herbicides (such as Starane, Starane + Sword or Starane + Salvo) may be tank mixed with Assert. Applications of this product plus Assert may cause temporary crop discoloration, stunting, or injury when heavy rainfall occurs shortly after application.

Refer to the Assert label for specific instructions and restrictions when using amine formulations or additional tank mix products.

#### **WITH DISCOVER**

This product can be tank mixed with Discover herbicide for improved control of grass weeds in spring wheat.

This product and a bromoxynil-containing herbicide (such as Bronate or Bison at 3/4 to 1 pint per acre) may be tank mixed with 4.0 ounces per acre of Discover herbicide, or 16 fluid ounces per acre Discover NG, for control of wild oat in wheat. This tank mix may also include Starane for greater spectrum of broadleaf control - see the Discover label for specific use directions, tank mixes, precautions, restrictions and geographical limitations of use.

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This product and a fluroxypyr-containing herbicide (such as Starane or Starane + Sword) may be tank mixed with 4.0 ounces per acre of Discover herbicide, or 16 fluid ounces per acre of Discover NG, for control of wild oat in wheat. See the Discover label for specific use directions, tank mixes, precautions, restrictions and geographical limitations of use. Some reduction in annual grass control may occur when optimum environmental conditions do not occur for several days prior to and after application – such as low moisture conditions, high and low temperatures or low humidity.

**WITH EVEREST**

This product can be tank mixed with Everest herbicide for improved control of grassy weeds in spring wheat. When this product and Everest are tank mixed, the mix must include 1/4 pint 2,4-D.

This product and a bromoxynil-containing herbicide (such as Bronate or Bison at 3/4 to 1 pint per acre) may be tank mixed with 0.3 ounce per acre of Everest for control of green foxtail, or 0.61 ounce per acre of Everest for control of green foxtail, yellow foxtail and wild oat. This tank mix may also include Starane for greater spectrum of broadleaf control - see the Everest label for specific use directions and restrictions.

This product and a fluroxypyr-containing herbicide (such as Starane, Starane + Saber, Starane + Sword or Starane + Salvo) may be tank mixed with 0.3 ounce per acre of Everest for control of green foxtail or 0.61 ounce per acre of Everest for control of green foxtail, yellow foxtail and wild oat. See the Everest label for specific use directions, tank mixes, precautions and restrictions of use. Some reduction in annual grass control may occur when optimum environmental conditions do not occur for several days prior to and after application – such as low moisture conditions, high and low temperatures or low humidity.

**WITH HOELON**

A tank mix of Hoelon 3EC herbicide + this product herbicide can be applied for annual ryegrass (in the Pacific Northwest only), wild oat and broadleaf weed control in winter and spring wheat, and spring barley. The Hoelon 3EC herbicide rate should be 2- 2/3 pints per acre with 0.6 ounce per acre of this product herbicide in spring and winter wheat.

A three-way tank mix of Hoelon 3EC herbicide + Buctril herbicide + this product can be applied for annual ryegrass (in the Pacific Northwest only), wild oat and broadleaf weed control in winter and spring wheat, and spring barley. The Hoelon 3EC herbicide rate should be 2-2/3 pints per acre with 0.6 ounce per acre this product in winter wheat, spring wheat and spring barley. Buctril herbicide should be used at 1 pint per acre.

This tank mixture should only be used under good soil moisture conditions when wild oats are in the 1 to 4-leaf stage. Reduced control of foxtail is likely when tank mixing Hoelon with this product. When foxtail is the major grassy weed in the field, DO NOT tank mix Hoelon 3EC herbicide + this product - use sequential treatments.

**WITH PUMA**

This product herbicide can be tank mixed with Puma 1 EC for control of some annual grass weeds. This tank mix may also include MCP ester, bromoxynil or bromoxynil/MCP, Starane, or Starane + Sword for greater spectrum of broadleaf control - see Puma 1 EC label for specific use directions and restrictions on tank mixes.

This product and 3 to 4 ounces active ingredient per acre of a bromoxynil containing herbicide (such as Bronate or Bison at 3/4 to 1 pint per acre) may be tank mixed with 0.66 pint per acre of Puma for annual grass control in wheat or barley. This tank mix may also include Starane for greater spectrum of broadleaf control - see "Puma" label for specific use directions and restrictions. DO NOT use this tank mix on two-row malting barley.

This product and a fluroxypyr-containing herbicide (such as Starane or Starane + Sword) may be tank mixed with 0.66 pint per acre of Puma for annual grass control in wheat or barley. See the Puma label for specific use directions, tank mixes, precautions and restrictions of use. This tank mix may also include MCP ester, bromoxynil or bromoxynil/MCP, Starane, or Starane + Sword for greater spectrum of broadleaf control - see Puma 1 EC label for specific use directions and restrictions on tank mixes. Some reduction in annual grass control may occur when optimum environmental conditions do not occur for several days prior to and after application - such as low moisture conditions, high and low temperatures, or low humidity.

**WITH TILLER**

This product can be tank mixed with Tiller for green foxtail, foxtail millets and volunteer corn control.

**WITH OTHER GRASS CONTROL PRODUCTS**

This product can be tank mixed with grass control products. Antagonism generally does not occur. However, J. Oliver Products, LLC recommends that you first consult your state experiment station, university, or extension agent, agricultural dealer, or J. Oliver Products, LLC representative as to the potential for antagonism before using the mixture. If no information is available, limit the initial use of this product and the grass product to a small area.

Do not tank mix this product with Achieve herbicide.

**WITH FUNGICIDES**

This product may be tank mixed or used sequentially with fungicides registered for use on cereal grains. Review all fungicide labels for restrictions.

**WITH INSECTICIDES**

This product may be tank mixed or used sequentially with insecticides registered for use on cereal grains. Review all insecticide labels for restrictions.

However, under certain conditions (drought stress, cold weather, or if the crop is in the 2 to 4-leaf stage), tank mixes or sequential applications of this product with organophosphate insecticides (such as Lorsban) may produce temporary crop yellowing or, in severe cases, crop injury. The potential for crop injury is greatest when wide fluctuations in day/night temperatures occur just prior to or soon after application. Test these mixtures in a small area before treating large areas.

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Do not apply this product within 60 days of crop emergence where an organophosphate insecticide has been applied as an in-furrow treatment because crop injury may result.

Do not use this product plus "Malathion" because crop injury will result.

#### WITH LIQUID NITROGEN SOLUTION FERTILIZER

Liquid nitrogen fertilizer solutions may be used as a carrier in place of water. Run a tank mix compatibility test before mixing this product in fertilizer solution. This product must first be completely dissolved in water and then added to liquid nitrogen solutions.

This product must first be added to water and allowed to completely dissolve (slurried) before adding to liquid nitrogen solutions (e.g., 28-0-0, 32-0-0). Ensure that the agitator is running while this product is added. Use of this mixture may result in temporary crop yellowing and stunting.

If using low rates of liquid nitrogen fertilizer in the spray solution (less than 50% of the spray solution volume), the addition of surfactant is necessary. Add surfactant at 1/2 pint -1 quart per 100 gal of spray solution (0.06 to 0.125% v/v) based on local recommendations.

When using high rates of liquid nitrogen fertilizer in the spray solution, adding surfactant increases the risk of crop injury. Consult your agricultural dealer, consultant, fieldsman, or J. Oliver Products, LLC representative for a specific recommendation before adding an adjuvant to these tank mixtures.

If 2,4-D or MCP is included with this product and fertilizer mixture, ester formulations tend to be more compatible (see manufacturer's label). Additional surfactant may not be needed when using this product in tank mix with 2,4-D ester or MCP ester and liquid nitrogen fertilizer solutions. Consult your agricultural dealer, consultant, field advisor, or J. Oliver Products, LLC representative for a specific recommendation before adding an adjuvant to these tank mixtures.

Liquid nitrogen fertilizer solutions that contain sulfur can increase crop response.

Do not use low rates of liquid fertilizer as a substitute for a surfactant.

Do not use with liquid fertilizer solutions with a pH less than 3.0.

#### TANK MIXTURES IN FALLOW

This product may be used as a fallow treatment, and may be tank mixed with other herbicides that are registered for use in fallow, such as glyphosate (such as Roundup), Landmaster II, Fallow Master, RT Master, glyphosate plus 2,4-D (ester formulations work best), glyphosate plus dicamba (such as Banvel / Clarity), 2,4-D (ester formulations work best), or dicamba (such as Banvel / Clarity) alone.

This product and fluroxypyr-containing herbicides (such as Starane, Starane + Saber, Starane + Sword or Starane + Salvo) may be used as a fallow treatment, and may be tank mixed with other herbicides that are registered for use in fallow, including glyphosate (such as Roundup), Landmaster II, Fallow Master, RT Master, glyphosate plus 2,4-D (ester formulations work best), glyphosate plus dicamba (such as Banvel / Clarity), 2,4-D (ester formulations work best), or dicamba (such as Banvel / Clarity) alone.

#### TANK MIXTURES IN PRE-PLANT BURNDOWN APPLICATIONS

This product may be used as a pre-plant burndown treatment alone or tank mixed with other herbicides that are registered for use as a pre-plant burndown product, such as Aim, glyphosate (such as Roundup), Landmaster II, Fallow Master, RT Master, glyphosate plus dicamba (such as Banvel / Clarity) or dicamba (such as Banvel / Clarity) alone.

#### TANK MIXTURES IN POST-HARVEST APPLICATIONS

This product may be used as a post-harvest treatment to crop stubble, and may be tank mixed with other herbicides that are registered for use in fallow.

This product and fluroxypyr-containing herbicides (such as Starane, Starane + Saber, Starane + Sword or Starane + Salvo) may be used as a post-harvest treatment to crop stubble, and may be tank mixed with other herbicides such as Aim, glyphosate (such as Roundup), Landmaster II, Fallow Master, RT Master, glyphosate plus dicamba (such as Banvel / Clarity), or dicamba (such as Banvel / Clarity) alone, that are registered for use in post-harvest cereal applications.

#### GROUND APPLICATION

For optimum spray distribution and thorough coverage, use flat-fan or low-volume flood nozzles.

- For best performance, select nozzles and pressure that deliver MEDIUM spray droplets.
- Nozzles that deliver COARSE spray droplets may be used to reduce drift, provided spray volume is increased to maintain coverage on small weeds. For optimal product performance and minimal spray drift, adjust the spray boom to the lowest possible spray height recommended in manufacturer's specifications.
- Overlaps or starting, stopping, slowing, and turning while spraying may result in crop injury.
- For flat-fan nozzles, use a spray volume of at least 5 gal per acre (GPA).
- For flood nozzles on 30" spacings, use at least 10 GPA, flood nozzles no larger than TK1 0 (or the equivalent), and a pressure of at least 30 psi. For 40" nozzle spacings, use at least 13 GPA; for 60" spacings use at least 20 GPA. It is essential to overlap the nozzles 100% for all spacings.

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- Raindrop RA nozzles are not recommended for this product applications, as weed control performance may be reduced.
- Use screens that are 50-mesh or larger.

### **AERIAL APPLICATION**

Use nozzle types and arrangements that provide optimum spray distribution and maximum coverage.

- Use 2 to 5 GPA
- Use at least 3 GPA in Idaho, Oregon, or Utah

Do not apply this product by air in the state of New York.

When applying this product by air in areas adjacent to sensitive crops, use solid-stream nozzles oriented straight back. Adjust the swath to avoid spray drift damage to sensitive crops downwind and/or use ground equipment to treat the border edge of fields. See the "SPRAY DRIFT MANAGEMENT" section of this label.

### **PRODUCT MEASUREMENT**

This product can be measured using this product volumetric measuring cylinder provided by J. Oliver Products, LLC. The degree of accuracy of this cylinder varies by +/- 7.5%. For more precise measurement, use scales calibrated in ounces.

### **CROP ROTATION**

Wheat, barley, and triticale may be replanted anytime after the application of this product.

Sugarbeets, winter rape, and canola can be planted 60 days after the application of this product.

Any other crop may be planted 45 days after the application of this product.

### **GRAZING**

Do not graze, or feed forage or hay from treated areas to livestock. Harvested straw collected after grain harvest may be used for bedding and/or feed.

### **MIXING INSTRUCTIONS**

Do not use with spray additives that alter the pH of the spray solution below pH 6.0 as rapid product degradation can occur. This product must be completely dissolved in clean water before adding to spray tanks that do not have continuous agitation during loading and mixing. (This is common for airplanes with turbine engines.)

1. Fill the tank 1/4 to 1/3 full of water.
2. While agitating, add the required amount of this product.
3. Continue agitation until this product is fully dissolved, at least 5 minutes.
4. Once this product is fully dissolved, maintain agitation and continue filling tank with water.
5. As the tank is filling, add the other tank mix partners and then add the required volume of spray adjuvant. Always add spray adjuvant last. Antifoaming agents may be used.
6. Dispersed tank mix partners can settle if the tank mixture is not continually agitated. If settling occurs, thoroughly re-agitate before using.
7. Apply this product spray mixture within 24 hours of mixing to avoid product degradation.
8. If this product and a tank mix partner are to be applied in multiple loads, fully dissolve this product in clean water prior to adding to the tank.

### **SPRAY EQUIPMENT**

For specific application equipment, refer to the manufacturer's recommendations for additional information on GPA, pressure, speed, nozzle types and arrangements, nozzle heights above the target canopy, etc.

Be sure to calibrate air or ground equipment properly before application. Select a spray volume and delivery system that will ensure thorough coverage and a uniform spray pattern with minimum drift. Use higher spray volumes to obtain better coverage when crop canopy is dense. Avoid swath overlapping, and shut off spray booms while starting, turning, slowing, or stopping, to avoid injury to the crop. Do not make applications using equipment and/or spray volumes or during weather conditions that might cause spray to drift onto nontarget sites. For additional information on spray drift refer to the "SPRAY DRIFT MANAGEMENT" section of this label.

### **SPRAYER CLEANUP**

The spray equipment must be cleaned before this product is sprayed. Follow the cleanup procedures specified on the labels of the previously applied products. If no directions are provided, follow the steps outlined in the "AFTER SPRAYING" section of this label.

### **AT THE END OF THE DAY**

It is recommended that during periods when multiple loads of this product are applied, at the end of each day of spraying, the interior of the tank be rinsed with fresh water and then partially filled, and the boom and hoses flushed. This will prevent the buildup of dried pesticide deposits, which can accumulate in the application equipment.

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## AFTER SPRAYING AND BEFORE SPRAYING CROPS OTHER THAN WHEAT, BARLEY OR TRITICALE

To avoid subsequent injury to desirable crops, thoroughly clean all mixing and spray equipment immediately following applications of this product as follows:

1. Empty the tank and drain the sump completely.
2. Spray the tank walls with clean water using a minimum volume of 10% of the tank volume. Circulate the water through the lines, including all by-pass lines, for at least two minutes. Flush the boom well and empty the sprayer. Completely drain the sump.
3. Repeat step 2.
4. Remove the nozzles and screens and clean separately in a bucket containing water.

The rinsate solution may be applied back to the crop(s) recommended on this label. Do not exceed the maximum labeled use rate. If cleaners are used, consult the cleaner label for rinsate disposal instructions. If no instructions are given, dispose of the rinsate on-site or at an approved waste disposal facility.

### Notes:

1. Always start with a clean spray tank.
2. Steam-cleaning aerial spray tanks is recommended to facilitate the removal of any caked deposits.
3. When this product is tank mixed with other pesticides, all cleanout procedures for each product should be examined and the most rigorous procedure should be followed.
4. Follow any pre-cleanout guidelines recommended on other product labels.

## SPRAY DRIFT MANAGEMENT

The interaction of many equipment and weather-related factors determines the potential for spray drift. The applicator is responsible for considering all these factors when making application decisions.

### IMPORTANCE OF DROPLET SIZE

#### AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR

The most effective way to reduce drift potential is to apply large droplets (>150 - 200 microns). The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. The presence of sensitive species nearby, the environmental conditions, and pest pressure may affect how an applicator balances drift control and coverage. **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 "SURFACE TEMPERATURE INVERSIONS" sections of this label.

#### CONTROLLING DROPLET SIZE - GENERAL TECHNIQUES

- Volume - Use high-flow-rate nozzles to apply the highest practical spray volume. Nozzles with higher-rated flows produce larger droplets.
- Pressure - Use the lower spray pressures recommended for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. **WHEN HIGHER FLOW RATES ARE NEEDED, USE A HIGHER-CAPACITY NOZZLE INSTEAD OF INCREASING PRESSURE.**
- 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.

#### CONTROLLING DROPLET SIZE - AIRCRAFT

- Number of Nozzles - Use the minimum number of nozzles with the highest flow rate that provide uniform coverage.
- Nozzle Orientation - Orienting nozzles so that the spray is emitted backwards, parallel to the air stream will produce larger droplets than other orientations.
- Nozzle Type - Solid-stream nozzles (such as disc and core with swirl plate removed) oriented straight back produce larger droplets than other nozzle types.
- Boom Length - The boom length should not exceed 3/4 of the wing or rotor length - longer booms increase drift potential.
- Application Height - Application more than 10 ft above the canopy increases the potential for spray drift.

## BOOM LENGTH AND HEIGHT

- Boom Height (ground) - Setting the boom at the lowest referenced height (if specified), which provides uniform coverage, reduces the exposure of droplets to evaporation and wind.
- Boom Height (aircraft) - Application more than 10 ft. above the canopy increases the potential for spray drift.
- Boom Length (aircraft) - The boom length should not exceed 3/4 of the wing length, using shorter booms decreases drift potential. For helicopters, use a boom length and position that prevents droplets from entering the rotor vortices.

## WIND

Drift potential increases at wind speeds of less than 3 mph (due to inversion potential) or more than 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given wind speed. **AVOID APPLICATIONS DURING GUSTY OR WINDLESS CONDITIONS.**

**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 hot and dry conditions, set up equipment to produce larger droplets to reduce effects of evaporation.

## SURFACE TEMPERATURE INVERSIONS

Drift potential is high during a temperature inversion. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain close to the ground and move laterally in a concentrated cloud. Temperature inversions are characterized by increasing temperature 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.

## SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce the effects of wind. However, it is the responsibility of the applicator to verify that the shields are preventing drift and not interfering with uniform deposition of the product.

## RESISTANCE

When herbicides that affect the same biological site of action are used repeatedly over several years to control the same weed species in the same field, naturally-occurring resistant biotypes may survive a correctly applied herbicide treatment, propagate, and become dominant in that field. Adequate control of these resistant weed biotypes cannot be expected. If weed control is unsatisfactory, it may be necessary to retreat the problem area using a product affecting a different site of action.

To better manage herbicide resistance through delaying the proliferation and possible dominance of herbicide-resistant weed biotypes, it may be necessary to change cultural practices within and between crop seasons such as using a combination of tillage, retreatment, tank-mix partners and/or sequential herbicide applications that have a different site of action. Weed escapes that are allowed to go to seed will promote the spread of resistant biotypes. It is advisable to keep accurate records of pesticides applied to individual fields to help obtain information on the spread and dispersal of resistant biotypes. Consult your agricultural dealer, consultant, applicator, and/or appropriate state agricultural extension service representative for specific alternative cultural practices or herbicide recommendations available in your area.

## INTEGRATED PEST MANAGEMENT

This product may be used as part of an Integrated Pest Management (IPM) program that can include biological, cultural, and genetic practices aimed at preventing economic pest damage. IPM principles and practices include field scouting or other detection methods, correct target pest identification, population monitoring, and treating when target pest populations reach locally determined action thresholds. Consult your state cooperative extension service, professional consultants or other qualified authorities to determine appropriate action treatment threshold levels for treating specific pest/crop systems in your area.

## RESTRICTIONS AND PRECAUTIONS

Injury to or loss of adjacent sensitive crops, desirable trees, or vegetation may result from failure to observe the following:

- Do not apply, drain or flush equipment on or near desirable trees or other plants or on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots.
- Do not use on lawns, walks, driveways, tennis courts, or similar areas. Prevent drift of spray to desirable plants.
- Take all necessary precautions to avoid all direct or indirect contact (such as spray drift) with non-target plants or areas.
- Carefully observe all sprayer cleanup instructions both prior to and after using this product, as spray tank residue may damage crops other than wheat, barley, or triticale.
- Wheat, barley and triticale varieties may differ in their response to various herbicides. J. Oliver Products, LLC recommends that you first consult your state experiment station, university, or extension agent as to sensitivity to any herbicide. If no information is available, limit the initial use of this product herbicide to a small area.
- Under certain conditions such as heavy rainfall; prolonged cold weather (daily high temperature less than 50°F), or wide fluctuations in day/night temperatures prior to or soon after this product's application, temporary discoloration and/or crop injury may occur. To reduce the potential of crop injury, tank mix this product with 2,4-D (ester formulations perform best – see "TANK MIXTURES" section of this label) and apply after the crop is in the tillering stage of growth.
- This product should not be applied to wheat, barley or triticale that is stressed by severe weather conditions, drought (including low levels of subsoil moisture), low fertility, water-saturated soil, disease, or insect damage, as crop injury may result. Risk of injury is greatest when the cereal crop is in the 2 to 5-leaf stage. Severe winter stress, drought, disease, or insect damage following application also may result in crop injury.
- Do not apply to wheat, barley or triticale crops underseeded with another crop.
- Dry, dusty field conditions may result in reduced control in wheel track areas. Also, observe the following:
- Do not graze treated fields or feed treated forage or hay. Harvested straw may be used for bedding and/or feed.
- Do not harvest wheat, barley, or triticale sooner than 45 days after the last application of this product.



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### STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** Store product in original container only. Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Store in a cool, dry place.

**PRODUCT DISPOSAL:** Waste resulting from the use of this product may be disposed of on-site or at an approved waste disposal facility.

**CONTAINER DISPOSAL: Nonrefillable container.** Do not reuse or refill this container. Offer for recycling or reconditioning, if available, 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. **Plastic Container - Non-refillable container less than or equal to 5 gallons:** Triple rinse or pressure rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank 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.

**Non-refillable container greater than 5 gallons:** Triple rinse or pressure rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. 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 back and forth several times. Turn the container over on its other end and tip 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.

**Paper & Plastic Bags-** Completely empty bag into application equipment by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Then offer for recycling if available or dispose of bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

**For Fiber Sacks-** Completely empty bag into application equipment by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Then offer for recycling if available or dispose of bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

For minor spills, leaks, etc., follow all precautions indicated on this label and clean up immediately. Take special care to avoid contamination of equipment and facilities during cleanup procedures and disposal of wastes. In the event of a major spill, fire or other emergency contact CHEMTREC 1-800-424-9300.

### WARRANTY DISCLAIMER

The directions for use of this product must be followed carefully. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, (1) THE GOODS DELIVERED TO YOU ARE FURNISHED "AS IS" BY MANUFACTURER OR SELLER AND (2) MANUFACTURER AND SELLER MAKE NO WARRANTIES, GUARANTEES, OR REPRESENTATIONS OF ANY KIND TO BUYER OR USER, EITHER EXPRESS OR IMPLIED, OR BY USAGE OF TRADE, STATUTORY OR OTHERWISE, WITH REGARD TO THE PRODUCT SOLD, INCLUDING, BUT NOT LIMITED TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, USE, OR ELIGIBILITY OF THE PRODUCT FOR ANY PARTICULAR TRADE USAGE. UNINTENDED CONSEQUENCES, INCLUDING BUT NOT LIMITED TO INEFFECTIVENESS, MAY RESULT BECAUSE OF SUCH FACTORS AS THE PRESENCE OR ABSENCE OF OTHER MATERIALS USED IN COMBINATION WITH THE GOODS, OR THE MANNER OF USE OR APPLICATION, INCLUDING WEATHER, ALL OF WHICH ARE BEYOND THE CONTROL OF MANUFACTURER OR SELLER AND ASSUMED BY BUYER OR USER. THIS WRITING CONTAINS ALL OF THE REPRESENTATIONS AND AGREEMENTS BETWEEN BUYER, MANUFACTURER AND SELLER, AND NO PERSON OR AGENT OF MANUFACTURER OR SELLER HAS ANY AUTHORITY TO MAKE ANY REPRESENTATION OR WARRANTY OR AGREEMENT RELATING IN ANY WAY TO THESE GOODS.

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