

83222-25

01-28-2010

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U.S. ENVIRONMENTAL PROTECTION AGENCY

Office of Pesticide Programs
Registration Division (7505P)
Ariel Rios Building
1200 Pennsylvania Ave., NW
Washington, D.C. 20460

EPA Reg. Number:

83222-25

Date of Issuance:

JAN 28 2010

NOTICE OF PESTICIDE:

x Registration
Reregistration
(under FIFRA, as amended)

Term of Issuance: Conditional

Name of Pesticide Product:

Bighorn DF Herbicide

Name and Address of Registrant (include ZIP Code):

J. Oliver Products, Inc.
3187 Robertson Gin Road
Hernando, MS 38632

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

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

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A) provided that you:

- 1. Submit and/or cite all data required for registration/re-registration review of your product when the Agency requires all registrants of similar products to submit such data.
2. Make the following label changes:
a. Revise the EPA Registration Number to read: "EPA REG. NO. 83222-25".
b. Add the EPA establishment number and net contents that were left blank in the draft label.
c. On page 3, in the first sentence below the Agricultural Use Requirements box, change "should" to "must," so that the sentence reads "This product must be used only in accordance with directions on this label."
d. On page 10, in the first sentence under "For Weed Control in Grass Grown for Seed Only in the States of Idaho, Oregon, Washington and Utah," delete the word "is" so that the sentence begins "This product may be used ..."

(Continued on next page)

Signature of Approving Official:

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

[Handwritten signature]

Date:

JAN 28 2010

- e. On page 13, revise the heading "General Information – All Uses" to read "Use Information – All Uses."

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records. Submit one copy of the final printed label for the record.

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BIGHORN DF HERBICIDE

DRY FLOWABLE

FOR USE ON WHEAT, BARLEY, TRITICALE, FALLOW AND PRE-PLANT BURNDOWN

ACTIVE INGREDIENT:

Tribenuron methyl: Methyl 2-[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)methylamino]carbonyl]amino]sulfonyl]benzoate.....75.0%

OTHER INGREDIENTS:.....25.0%

TOTAL 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 (877) 325-1840

EPA REG. NO. 83222-XX
EPA EST. NO.

ACCEPTED
with COMMENTS
in EPA Letter Dated

JAN 28 2010

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

83222-25

NET CONTENTS LBS. GALS.

Manufactured For:
J. Oliver Products, Inc.
3187 Robertson Gin Road
Hernando, MS 38632

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

Causes moderate eye irritation. Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Prolonged or repeated use of the product may cause allergic reactions in some individuals. Remove and wash contaminated clothing before reuse.

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

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: When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR Part 170.240 (d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

USER SAFETY RECOMMENDATIONS	
Users Should:	
<ul style="list-style-type: none"> • 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 ON SKIN OR CLOTHING	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 to 20 minutes. • Call a poison control center or doctor for treatment advice.
IF SWALLOWED	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
IF IN EYES	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for further treatment advice.
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-441-3637 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 by cleaning of equipment or disposing of equipment washwaters or wastes.

PESTICIDE HANDLING

- Calibrate sprayers only with clean water away from the well site.
- Make scheduled checks of spray equipment.
- Ensure that all operation employees accurately measure pesticides.
- Mix only enough product for the job at hand.
- Avoid overfilling 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 or uses.
- Avoid storage of pesticides near well sites.
- When triple-rinsing the pesticide container, be sure to add the rinsate to the spray mix.

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 such as polyethylene or polyvinyl chloride.
- Shoes plus socks.

This product should be used only in accordance with directions on this label.

This product may be used on for use on wheat, barley, triticale, post-harvest burndown, fallow and pre-plant burndown 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.

USE INFORMATION

This product is a dry flowable granule that is used for selective postemergence weed control in wheat (including durum), barley, triticale, post-harvest burndown, fallow and pre-plant burndown. The best control is obtained when this product is applied to young, actively growing weeds. The use rate will depend on weed spectrum and size of weed at time of application. The degree and duration of control may depend on the following:

- weed spectrum and infestation intensity
- weed size at application
- environmental conditions at and following treatment

This product is noncorrosive, nonflammable, nonvolatile, and does not freeze. This product should be mixed in water and applied as a uniform broadcast spray.

USE RATE

Apply 1/6 to 1/3 oz of this product per acre to wheat (including durum), barley, triticale, fallow and pre-plant burndown. Two applications of this product may be made per season provided the total amount applied does not exceed 1/3 oz per acre.

BIOLOGICAL ACTIVITY AND ENVIRONMENTAL CONDITIONS

This product is absorbed through the foliage of broadleaf weeds, rapidly inhibiting their growth. Leaves of susceptible plants appear chlorotic from 1 to 3 weeks after application and the growing point subsequently dies.

This product provides the best control in vigorously growing crops that shade competitive weeds. Weed control in areas of thin crop stand or seeding skips may not be as satisfactory. However, a crop canopy that is too dense at application can intercept spray and reduce weed 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.

In warm, moist conditions, the expression of herbicide symptoms is accelerated in weeds; in cold, dry conditions, expression of herbicide symptoms is delayed. In addition, weeds hardened-off by drought stress are less susceptible to this product.

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.

FALLOW

FALLOW USE RATE

Apply 1/6 to 1/3 oz of this product per acre to fallow fields. Two applications of this product may be made per crop season provided the total amount applied does not exceed 1/3 oz per acre.

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

APPLICATION TIMING

This product may be used as a fallow treatment when the majority of weeds have emerged and are actively growing.

TANK MIXTURES IN FALLOW

This product may be used as a fallow treatment, and should be tank mixed with other herbicides that are registered for use in fallow. Read and follow all manufacturers' label directions for the companion herbicide. If those directions conflict with this label, do not tank mix the herbicide with this product.

PRE-PLANT BURNDOWN IN COTTON

This product may be applied for burndown of emerged weeds prior to the emergence of cotton. This product may be used as part of a pre-plant burndown treatment, in combination with other suitable registered pre-plant herbicides.

Read and follow all manufacturers label directions for the companion herbicide. If those directions conflict with this label, do not tank mix the herbicide with this product.

Apply this product at 0.2 ounce per acre for control or partial control of the weeds listed on this label. Allow at least 14 days between application of this product and planting of cotton. Include a nonionic surfactant, petroleum based crop oil concentrate, or vegetable-seed oil-based product (methylated seed oils are considered a vegetable seed-based oil).

NOTE: If another herbicide is tank mixed with this product to increase the broadleaf weed spectrum, select adjuvants based on the adjuvant limitations of the companion herbicide.

SPRAY ADJUVANTS

Nonionic Surfactant (NIS)

Apply at a rate (concentration) of 0.25-0.5% v/v (1-2 qt per 100 gal spray solution). Use the higher rate in hot and dry conditions to enhance control.

Crop Oil Concentrate

Under dry conditions or during cool weather, a petroleum based crop oil concentrate, or vegetable-seed oil-based product may be used in place of a nonionic surfactant at 1-2 gallon/100 gal of spray solution (1-2% v/v) to enhance weed control. Use a petroleum-based crop oil concentrate with at least 14% emulsifiers/surfactant and 80% oil.

Ammonium Nitrogen Fertilizer

An ammonium nitrogen fertilizer can be added to a surfactant or a crop oil concentrate to enhance control. Alternatively, a high-quality, sprayable grade of ammonium sulfate (21-0-0) may be used.

IMPORTANT PRECAUTIONS

Seedling disease, nematodes, cold weather, deep planting (more than 2"), excessive moisture, high salt concentration, and/or drought may weaken cotton seedlings and increase the possibility of crop injury. Cotton resumes normal growth once favorable growing conditions return.

RESTRICTION

- DO NOT apply later than 14 days before planting cotton.

PREPLANT BURNDOWN

RATES AND ADJUVANTS

Apply this product at 1/6 - 1/3 oz per acre. Use the higher rate for denser weed populations or where weeds are approaching the maximum size. Also use the higher rate when the weed infestation predominantly consists of those weeds listed in the "Weeds Partially Controlled" section below, or when application timing and environmental conditions are marginal.

Add a spray adjuvant to the tank. Crop Oil Concentrate is preferred at 1% v/v (1 gallon per 100 gallons of final spray volume). Refer to the "Spray Adjuvants" section of this label.

Sequential treatments of this product may be made provided the total amount of this product applied during one fallow/pre-plant cropland season does not exceed 1/3 ounce per acre.

Cotton Pre-plant Burndown: Apply 1/5 oz per acre. Allow at least 14 days from time of application to planting cotton.

APPLICATION TIMING

Apply this product as a burndown treatment to control emerged weeds in the fall or spring. Make applications when the majority of weeds have emerged and are actively growing.

Applications can be made:

- prior to wheat. Apply before planting or shortly after planting (and prior to emergence).
- prior to cotton. Allow at least 14 days between application and planting.
- prior to sugarbeets, winter rape and canola. Allow at least 60 days between application and planting.
- prior to any other crops (such as corn, grain sorghum, rice and soybeans). Allow at least 45 days between application and planting.

TANK MIXTURES

Addition of a minimum of 1/2 lb active ingredient per acre of 2,4 D LVE ester (e.g. 1 pt of a 4 lb/gal 2,4-D LVE formulation) is recommended for best results, and required for burndown of some weeds.

This product may be mixed with one or more other suitably registered herbicides for expanded weed size, or weed spectrum, and/or to add residual control. Read and follow all manufacturers label directions for the companion herbicide. If those directions conflict with this label, do not tank mix the herbicide with this product.

APPLICATION EQUIPMENT AND SPRAY VOLUMES

Apply uniformly by ground equipment using a properly calibrated fixed boom sprayer. For burndown applications of existing vegetation, use with spray nozzles that provide thorough coverage of the weeds.

**WEEDS CONTROLLED - UP TO 3 IN HEIGHT OR DIAMETER
FALLOW AND PRE-PLANT BURNDOWN**

Black mustard	Early whitlowgrass	Purslane speedwell
Blue/purple mustard	False chamomile	Russian thistle
Bushy wallflower/Treacle mustard	Field pennycress	Shepherd's-purse**
Canada thistle	Flixweed	Slimeleaf lambsquarters
Coast fiddleneck	Henbit**	Smallflower buttercup
Corn spurry	Hairy buttercup	Smallseed false fax
Common chickweed	Kochia	Tarweed fiddleneck
Common groundsel	Marestail*	Tumble / Jim hill mustard*
Common lambsquarters	Mayweed chamomile	Wild chamomile
Common purslane	Miners lettuce	Wild mustard
Cressleaf groundsel (butterweed)	Pineappleweed	Wild parsnip*
Dandelion*	Poison hemlock*	
Deadnettle**	Prickly lettuce**	

* 2,4-D LVE addition required

** 2,4-D LVE addition recommended

WEEDS PARTIALLY CONTROLLED* UPTO 3 IN HEIGHT OR DIAMETER
FALLOW AND PREPLANT BURNDOWN**

Annual sowthistle	Pennsylvania smartweed	Wild buckwheat
Common sunflower (volunteer)	Prostrate knotweed	Wild garlic
Common vetch	Redroot pigweed	Wild radish
Hairy vetch	Redmaids	
Hairy nightshade	Tansymustard	

*** partially controlled weeds exhibit a visual reduction in numbers as well as a significant loss of vigor.

WHEAT, BARLEY AND TRITICALE

This product may be used as postemergence applications to triticale anytime after crop is in the 2-3 leaf stage but before the flag leaf is visible. Follow the postemergence use rate instructions listed for wheat. Refer to this label for information regarding use restrictions, rotational cropping directions, sprayer cleanup, use precautions and other information. Other suitable herbicides, fungicides; and insecticides registered for use on triticale may be tank mixed or used sequentially with these products providing the recommended application timing is the same. Read and follow all manufacturers' label directions for the tank mix partner prior to use. The most restrictive provisions on either label apply.

USE RATE

Use 1/3 oz of this product per acre for heavy infestation of those weeds listed in the WEEDS PARTIALLY CONTROLLED section of this label and/or when application timing and environmental conditions are marginal (refer to BIOLOGICAL ACTIVITY AND ENVIRONMENTAL CONDITIONS section of this label for best performance).

Use 1/6 to 1/4 oz of this product per acre for light infestation of weeds listed in the WEEDS CONTROLLED section of this label. Conditions at application should be optimum for effective treatment of these weeds.

APPLICATION TIMING

Apply this product 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.

Since this product has very little or no soil activity, it controls only those weeds that have germinated; therefore, apply this product when all or most of the weeds have germinated. For best results, annual broadleaf weeds should be past the cotyledon stage, actively growing, and less than 4 tall or wide. See the SPECIFIC WEED PROBLEMS section of this label for more information.

Rainfall immediately after treatment can wash this product off of weed foliage, resulting in reduced weed control. Several hours of dry weather are needed to allow this product to be sufficiently absorbed by weed foliage.

WEEDS CONTROLLED

This product effectively controls the following weeds when used according to label directions:

Black mustard
Blue/Purple mustard
Bushy wallflower/Treacle mustard
Canada thistle **
Coast fiddleneck
Common Chickweed
Common Groundsel
Common Lambsquarters
Common Purslane
Corn Gromwell **
Corn spurry
Cowcockle

Curly Dock **
False chamomile / Wild chamomile /
Scentless chamomile
(Matricaria maritima L.)
Field pennycress
Flixweed
Hairy buttercup
Kochia ** ‡
London Rocket
Mayweed chamomile / Stinking
Chamomile / dog fennel (Anthemis
cotula L.) **

Miners lettuce
Pineappleweed
Prickly lettuce ** ‡
Redroot pigweed
Russian thistle ** ‡
Shepherd's-purse
Slimleaf lambsquarters
Smallseed false fax
Tansymustard
Tarweed fiddleneck
Tumble/Jim Hill mustard **
Wild mustard

WEEDS PARTIALLY CONTROLLED*

This product partially controls the following weeds when used according to label directions:

Annual sowthistle	Hairy Vetch **	Wild buckwheat
Common cocklebur	Henbit	Wild garlic
Common sunflower (volunteer) **	Pennsylvania smartweed	Wild radish**
Common Vetch **	Prostrate knotweed	
Hairy nightshade	Redmaids	

* Partially controlled weeds exhibit a visual reduction in numbers as well as a significant loss of vigor. For better results, use 1/4 to 1/3 oz of this product per acre and include a tank mix partner such as 2,4-D, MCP, bromoxynil (such as Buctril, Bison, Bronate or Bronate Advanced) , or dicamba (such as Banvel / Clarity). Refer to the "TANK MIXTURES" section of this label.

** See the Specific Weed Problems section of this label for more information.

‡ 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.

TANK MIXTURES

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 Weeds Controlled. Read and follow all manufacturers label directions for the companion herbicide. If those directions conflict with this label, do not tank mix the herbicide with this product.

With 2,4-D (amine or ester) or MCP (amine or ester)

This product may be tank mixed with 2,4-D and MCP (preferably ester formulations) herbicides for use on wheat, barley and triticale. For best results, add 2,4-D or MCP herbicides to the tank at 1/8 to 3/8 lb active ingredient per acre. In tank mixes containing 1/8 lb active ingredient 2,4-D or MCP per acre, add 1 to 2 pt of nonionic surfactant; in tank mixes containing 1/4 to 3/8 lb active ingredient 2,4-D or MCP per acre, add 1 pt of nonionic surfactant.

Higher rates of 2,4-D or MCP may be used, but do not exceed the highest rate allowed by those respective labels. When using rates of 3/8 lb ai per acre or higher, use of additional nonionic surfactant may not be needed, unless specified otherwise in the 2,4-D or MCP label, or local directions.

Read and follow all label instructions on timing, precautions, and warnings for these herbicides before using these tank mixtures.

With 2,4-D or MCP (amine or ester) and Dicamba (such as Banvel / Clarity)

This product may be applied in a 3-way tank mix with formulations of dicamba (such as Banvel / Clarity) and 2,4-D or MCP. Observe all applicable directions, restrictions and precautions on labels of all products used.

Make applications at 1/8 to 1/3 oz of this product + 1-1.5 oz active ingredient dicamba (such as Banvel / Clarity) + 1/4 to 3/8 lb active ingredient of 2,4-D or MCP (ester or amine) per acre. Use higher rates when weed infestation is heavy. Add 1-2 pt of nonionic surfactant to the 3 way mixture, where necessary, as deemed by local directions. Use of additional nonionic surfactant may not be needed with the higher phenoxy rates and ester phenoxy formulations. Consult the specific 2,4-D or MCP and dicamba labels, or local directions for more information.

Apply this 3-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.

Tank mixtures of this product plus dicamba (such as Banvel / Clarity) may result in reduced control of some broadleaf weeds.

Do not apply this 3-way mixture at high rates more than once a year, or more than twice per year at the low rates.

With Bromoxynil 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 3 to 6 oz active ingredient per acre (such as Bronate or Bison at 3/4 to 1-1/2 pt per acre). Note that tank mixtures of this product plus bromoxynil may result in reduced control of Canada thistle.

Read and follow all label instructions on timing, precautions, and warnings for these herbicides before using these tank mixtures. Follow the most restrictive labeling.

With Starane

This product can be tank mixed with Starane herbicide for improved control of broadleaf weeds in wheat, barley, and fallow.

For improved control of Kochia (2-4 tall), Russian thistle, mustard species, and wild buckwheat, this product may be tank mixed with 1/3 to 1-1/3 pints per acre of Starane. Refer to the Starane label information regarding use restrictions, labeled crops, rotational cropping directions, sprayer cleanup, use precautions and other information. The most restrictive provisions on either label will apply. Do not use the tank mix if any restrictions on the Starane label conflict with directions on this herbicide label.

Other suitable registered herbicides, fungicides, and insecticides registered for use on small grains or fallow may be tank mixed or used sequentially with this mixture. Read and follow all manufacturer's label directions for the companion herbicide. The most restrictive provisions on either label will apply.

With Starane + Salvo

This product can be tank mixed with Starane + Salvo herbicides for improved control of broadleaf weeds in wheat, barley, and fallow. For improved control of Kochia (2-4 tall), Russian thistle, mustard species and wild buckwheat, this product may be tank mixed with 2/3 to 2-2/3 pints per acre of Starane + Salvo. Refer to the Starane and Salvo labels for information regarding use restrictions, labeled crops, rotational cropping directions, sprayer cleanup, use precautions and other information. The most restrictive provisions on either label will apply. Do not use the tank mix if any restrictions on the Starane or Salvo label conflict with directions on this label.

Other suitable registered herbicides, fungicides, and insecticides registered for use on small grains or fallow may be tank mixed or used sequentially with this mixture.

With Starane + Sword

This product can be tank mixed with Starane+ Sword herbicides for improved control of broadleaf weeds in wheat, barley, and fallow. For improved control of Kochia (2-4 tall) Russian thistle, mustard species and wild buckwheat, this product may be tank mixed with 3/4 to 2-3/4 pints per acre of Starane + Sword. Refer to this products herbicide label, and the Starane and Sword labels for information regarding use restrictions, labeled crops, rotational cropping directions, sprayer cleanup, use precautions and other information. The most restrictive provisions on either label will apply. Do not use the tank mix if any restrictions on the Starane or Sword label conflict with directions on this label.

Other suitable registered herbicides, fungicides, and insecticides registered for use on cereal grains or fallow may be tank mixed or used sequentially with this mixture. Read and follow all manufacturer's label directions for the companion herbicide.

The most restrictive provisions on either label will apply.

With Starane, Starane + Salvo or Starane + Sword

For improved control of Kochia (2-4 tall), this product may be tank mixed with 1/3 to 2/3 pints per acre of Starane, 2/3 to 1 1/3 pints per acre of Starane + Salvo, or 3/4 to 1 1/2 pints per acre of Starane + Sword. Refer to this label, and the Starane, Starane + Salvo, and Starane + Sword labels for information regarding use restrictions, labeled crops, rotational cropping directions, sprayer cleanup, use precautions and other information. The most restrictive provisions on any of the labels will apply. Do not use the tank mix if any restriction on the Starane, Starane + Salvo or Starane + Sword labels conflict with directions on this label.

2,4-D and MCP herbicides (preferably ester formulations) may be tank mixed with this product plus Starane. Consult local directions 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 weeds in wheat.

Refer to the Maverick label for information regarding use restrictions, labeled crops, rotational cropping directions, sprayer cleanup, use precautions and other information. The most restrictive provisions on either label will apply. Do not use the tank mix if any restrictions on the Maverick label conflict with directions on this label.

With Aim

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

Refer to the Aim label for information regarding use restrictions, labeled crops, rotational cropping directions, sprayer cleanup, use precautions and other information. The most restrictive provisions on either label will apply. Do not use the tank mix if any restrictions on the Aim label conflict with directions on this label.

With Stinger, or Cutback, or Cutback M, or WideMatch

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

Refer to the Stinger, Cutback, Cutback M, or Widematch label for information regarding use restrictions, labeled crops, rotational cropping directions, sprayer cleanup, use precautions and other information. The most restrictive provisions on either label will apply. Do not use the tank mix if any restrictions on the Stinger, Cutback, Cutback M, or Widematch label conflict with directions on this label.

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, Bronate Advanced or Rhino). Applications of this product plus Assert may cause temporary crop discoloration, stunting, or injury when heavy rainfall occurs shortly after application.

With Puma

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

Refer to the Puma label for information regarding use restrictions, labeled crops, rotational cropping directions, sprayer cleanup, use precautions and other information. The most restrictive provisions on either label will apply. Do not use the tank mix if any restrictions on the Puma label conflict with directions on this label.

With Puma 1EC

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

Read and follow all label instructions on the EPA approved Puma 1 EC label for tank mixes, application timing, precautions, and restrictions. Do not use the tank mix if any restrictions on the Puma 1EC label conflict with directions on this label.

With Discover or Discover NG

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

Refer to the Discover or Discover NG label for information regarding use restrictions, labeled crops, rotational cropping directions, sprayer cleanup, use precautions and other information. The most restrictive provisions on either label will apply. Do not use the tank mix if any restrictions on the Discover or Discover NG label conflict with directions on this label.

With Everest

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

Refer to the Everest label for information regarding use restrictions, labeled crops, rotational cropping directions, sprayer cleanup, use precautions and other information. The most restrictive provisions on either label will apply. Do not use the tank mix if any restrictions on the Everest label conflict with directions on this label.

With Other Herbicides

Tank mixtures of this product plus metribuzin may result in reduced control of wild garlic.

Tank mixtures of this product with Hoelon 3EC may result in reduced grass control.

With Fungicides

This product may be tank mixed or used sequentially with fungicides registered for use on cereal crops.

With Insecticides

This product may be tank mixed or used sequentially with insecticides registered for use on cereal crops. However, under certain conditions (drought stress, or if the crop is in the 2 to 4 leaf stage), tank mixtures 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.

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

Do not use this product plus Malathion since crop injury may 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 pre-slurried with water and then added 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 pt to 1 qt per 100 gal of spray solution (0.06 to 0.25% v/v) based on local directions.

When using high rates of liquid nitrogen fertilizer solution in the spray solution, adding surfactant increases the risk of crop injury. 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 representative for a specific recommendation before adding an adjuvant to these tank mixtures.

Note: In certain areas east of the Mississippi river unacceptable crop response may occur with use of straight or dilute nitrogen fertilizer carrier solutions where cold temperatures or widely fluctuating day/night temperatures exist. In these areas consult your

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agricultural dealer, consultant, field advisor, or J. Oliver Products representative for a specific recommendation before using nitrogen fertilizer carrier solutions.

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

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

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

SPECIFIC WEED PROBLEMS

Canada thistle: For best results, apply 1/3 oz of this product per acre when all thistles are 4" to 8" tall with 2" to 6" of new growth. Make the application in the spring.

Corn Gromwell: For best results, apply 1/3 oz of this product per acre in combination with 2,4-D or MCP (refer to the Tank Mixtures section of this label).

Curly Dock: For best results, apply 1/4 to 1/3 oz of this product per acre in combination with 2,4-D or MCP (refer to the Tank Mixtures section of this label).

Kochia: Naturally occurring biotypes resistant to this product are known to occur. For best results, use this product in a tank mixture with Starane, Starane + Salvo, Starane + Sword, dicamba (such as Banvel / Clarity) and 2,4-D or MCP (ester or amine), or bromoxynil containing products (such as Buctril, Bison, Bronate, Bronate Advanced or Rhino).

This product should be applied in the spring when kochia are less than 2" tall and are actively growing (refer to the Tank Mixtures section of this label for additional details on rates and restrictions).

Mayweed chamomile / Stinking Chamomile / dog fennel: For best results, apply 1/4 to 1/3 oz of this product per acre.

Russian thistle, Prickly lettuce: Naturally occurring biotypes resistant to this product of these weeds are known to occur. For best results, use this product in a tank mixture with dicamba (such as Banvel / Clarity) and 2,4-D or MCP (ester or amine), or bromoxynil containing products (such as Buctril, Bison, Bronate, Bronate Advanced or Rhino).

This product should be applied in the spring when Russian thistle, and prickly lettuce are less than 2" tall or 2" across and are actively growing (refer to the Tank Mixtures section of this label for additional details on rates and restrictions).

Tumble/Jim Hill mustard: For best results, apply 1/3 oz of this product per acre in combination with 2,4-D or MCP (refer to the Tank Mixtures section of this label).

Vetch (common and hairy): For best results, apply 1/4 to 1/3 oz of this product per acre when vetch is less than 6" in length. For severe infestations of vetch, or when vetch is greater than 6" in length, apply this product in combination with 2,4-D or MCP (refer to the Tank Mixtures section of this label).

Wild radish: For best results, apply 1/6 to 1/3 oz this product per acre, plus 1/4 to 3/8 lb active ingredient per acre MCP, plus 0.25% v/v nonionic surfactant (1 qt per 100 gal of spray solution) to wild radish rosettes less than 6" diameter. Make the application either in the fall or spring. Applications made later than 30 days after weed emergence will result in partial control. Fall applications should be made before plants harden-off.

SU / IMI Tolerant Volunteer Sunflowers: Varieties resistant to SU and IMI products (like this product, Beyond, Pursuit, Raptor) are under development. For best results, use this product in a tank mix with Starane, Starane + Salvo, Starane + Sword, dicamba (such as Banvel / Clarity) and 2,4-D or MCP (ester or amine), or bromoxynil containing products (such as Buctril, Bison, Bronate, Bronate Advanced or Rhino).

FOR WEED CONTROL IN GRASS GROWN FOR SEED

ONLY IN THE STATES OF IDAHO, OREGON WASHINGTON AND UTAH

This product may be used for selective postemergence control or suppression of certain broadleaf weeds in seedling and established stands of bentgrass, bluegrass, annual ryegrass, orchardgrass, tall fescue, and fine fescue grown for seed.

This product may be used on seedling and established perennial rye-grass providing user accepts all risk of possible crop injury and/ or reduced seed yield.

This product may cause temporary yellowing and stunting of grass. Best results are obtained when this product is applied to young, actively growing weeds. The degree of control and duration of effect are dependent on the rate used, sensitivity and size of target weeds and environmental conditions at the time of and following application.

Note: Certain varieties of grass may be sensitive to this product. When using this product for the first time on a particular variety, limit use to one 10 ounce container.

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USE RATES AND TANK MIXES WITH OTHER HERBICIDES

Bentgrass, Bluegrass, Annual Ryegrass, Orchardgrass, Fine Fescue, and Tall Fescue.

Seedling Stands: For best results apply this product in a tank mix with another suitable broadleaf herbicide.

For use on annual ryegrass, orchardgrass, tall fescue and fine fescue, apply at 1/6 oz/A after stand is in 4 leaf stage.

For use on bentgrass, apply at 1/6 oz/A after stolens are 3 to 5 inches across.

For use on bluegrass, apply at 1/6 to 1/3 oz/A after stand is in 4 leaf stage.

Established Stands: For stands that have been established for at least one growing season (fall or spring), apply this product at 1/6 to 1/3 oz/A in a tank mix with another suitable broadleaf herbicide. Use the higher rate for larger weeds and hard to control weeds like wild carrot. Apply prior to jointing.

Perennial Ryegrass: Perennial ryegrass is more sensitive to this product than other grass species. Crop injury in the form of stunting and possible reduced seed yield may occur. To minimize the risk of crop injury, use the 1/6 oz/A rate and always use either 2,4-D or Clarity and liquid nitrogen with this product.

Seedling Stands: Apply this product at 1/6 oz/A in a tank mix with another suitable broadleaf herbicide after grass is in 5- to 6-leaf stage.

Note: The 1/3 oz rate of this product should be used only for the control or suppression of problem weeds like wild carrot where the benefit of weed control can be offset by possible crop injury including possible yield reduction.

TANK MIXTURES

Always use this product in a tank mix with another broadleaf herbicide such as 2,4-D or MCPA as these herbicides safen the effects of this product on grasses while improving weed control performance on most broadleaf weeds. Testing has shown that 2,4-D, provides the best overall weed control in a tank mix with this product. However, 2,4-D at 1/2 lb A/A provides the best crop safening effects.

The addition of liquid fertilizer is also recommended.

Use a minimum of 1/4 to 1/2 lb A/A of 2,4-D or MCPA (8 to 16 fluid ounces of 4 lb/gal product).

This product can be applied with liquid fertilizers. Liquid fertilizers (20%, 28%, 32% N at a minimum of 4 gallons/100 gallons of spray solution) enhance the performance of this product and improve crop safety. Always use a surfactant and another broadleaf herbicide when using liquid fertilizer with this product.

WEEDS CONTROLLED

The following weeds are controlled or suppressed.

WEEDS PARTIALLY CONTROLLED OR SUPPRESSED*

- Dovefoot geranium Redstem filaree
- Spotted catsear
- Wild carrot

***Partial Control or Suppression:** A visual reduction in weed competition (reduced stand and/or vigor) compared to an untreated area.

Surfactant

Always use a nonionic surfactant of at least 80% active ingredient at the rate of 0.25% volume/volume (1 quart per 100 gallon of spray solution).

Precautions/Restrictions

The use of methylated seed oil (MSO) or crop oil is not recommended with this product on grass seed crops as these adjuvants may produce unsatisfactory crop injury.

Do not apply more than 1/3 ounce per acre per growing season.

Do not graze or cut for hay or feed associated by-products for 60 days after application. After harvest, straw and other by-products may be fed to animals. Make last application of this product at least 60 days prior to harvest of grass seed.

Do not apply this product in a tank mix with organophosphate insecticides as severe crop injury may occur.

Do not apply to grass that is under stress from severe weather conditions, drought, low fertility, water saturated soil, disease or insect damage, as crop injury may result. Under certain conditions such as prolonged cool weather (daily high temperature less than 50° F) or wide fluctuations in day/night temperatures just prior to or soon after treatment, temporary yellowing and/or crop stunting may occur.

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Do not apply to Bermudagrass.

**SPRINKLER CHEMIGATION WITH THIS PRODUCT AND BROMOXYNIL CONTAINING HERBICIDES
(SUCH AS BISON, BRONATE, BRONATE ADVANCED OR RHINO) IN WINTER & SPRING
WHEAT & SPRING BARLEY IN IDAHO**

DIRECTIONS FOR USE

This product may be used in combination with bromoxynil containing herbicides (such as Bison, Bronate, Bronate Advanced or Rhino) for use in fall seeded wheat, spring seeded barley and spring seeded wheat when applied through sprinkler irrigation systems in the state of Idaho.

HOWTO USE

Use 1/4 to 1/3 oz of this product per acre in combination with bromoxynil containing herbicides at a rate of 3 to 6 oz active ingredient per acre (such as Bronate or Bison at 3/4 to 1-1/2 pt per acre). Apply to wheat and barley after the 3-leaf stage but before the flag leaf is visible. Make only one chemigation application of this mixture per crop year.

For best results, apply to broadleaf weeds up to the 4-leaf stage, or 2 inches in height or 1 inch in diameter, whichever comes first. Consult this product's label and bromoxynil containing herbicides package labels for list of weeds controlled or suppressed.

SPRINKLER IRRIGATION APPLICATION

Apply this tank mix through sprinkler irrigation systems including center pivot, lateral move, side (wheel) roll, solid set or hand move irrigation systems only. Do not apply these herbicides through any other type of irrigation system.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts. **Do not connect an irrigation system (including greenhouse systems) used for this product application to any public water system.** A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

The sprinkler chemigation system must contain a functional check valve, vacuum relief valve, and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops. The irrigation line or water pump must include a functional pressure switch, which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock. Do not apply when wind speed favors drift beyond the area intended for treatment.

SPECIFIC REQUIREMENTS FOR APPLICATION THROUGH SPRINKLER IRRIGATION SYSTEMS

1. For use via chemigation only in Idaho.
2. In center pivot and continuous lateral move systems, this product + bromoxynil-containing herbicides should be applied continuously for the duration of the water application. In solid set systems, application of the tank mix should be made during the last 30 to 45 minutes of the irrigation.
3. Set the sprinkler system to deliver approximately 0.5 inch or less of water per acre for best product performance.
4. Fill the supply tank with half of the water amount desired, add this product and agitate it well. Add the bromoxynil containing herbicides and then add the remaining water amount with agitation. Bromoxynil containing herbicides require a dilution with at least 4 parts water to 1 part bromoxynil containing herbicides.
5. Agitation is recommended in the pesticide supply tank when applying this tank mixture.
6. The use of a surfactant is not recommended with this tank mix application.
7. Inject this product + bromoxynil containing herbicides solution at least 8 feet ahead of a right angle turn of irrigation pipe to insure adequate mixing. Allow sufficient time for the herbicide mixture to be flushed through the lines before turning off irrigation water.
8. Follow both this product and bromoxynil containing herbicides label instructions for spray tank cleanout both before and after application. Flush lines with clean water following application.
9. Do not apply when wind speed favors drift beyond the area intended for treatment. Avoiding spray drift is the responsibility of the applicator.

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POST HARVEST

USE RATE

Apply 1/6 to 1/3 oz of this product per acre to crop stubble after harvest. Use 1/3 ounce per acre rate when weed infestation is heavy and predominantly consists of those weeds listed under the "WEEDS PARTIALLY CONTROLLED" section of this label, or when application timing and environmental conditions are marginal. (See the "APPLICATION TIMING" Section for restriction on planting intervals). This product may be applied in combination with other suitable registered 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/pre plant cropland season does not exceed 1/3 ounce per acre.

APPLICATION TIMING

This product may be used as a burndown treatment to crop stubble when the majority of weeds have emerged and are actively growing.

TANK MIXTURES

This product may be used as a post harvest treatment to crop stubble, and should be tank mixed with other herbicides that are registered for use in fallow. Read and follow all manufacturers' label directions for the companion herbicide. If those directions conflict with this label, do not tank mix the herbicide with this product.

GENERAL INFORMATION - ALL USES

SPRAY ADJUVANTS

Include a spray adjuvant with applications of this product. In addition, an ammonium nitrogen fertilizer may be used. Consult your Ag dealer or applicator, and technical bulletins prior to using an adjuvant system. If another herbicide is tank mixed with this product, select adjuvants authorized for use with both products. Products must contain only EPA-exempt ingredients (40CFR 1001).

Nonionic Surfactant (NIS)

- Apply 0.06 to 0.50% volume/volume (1/2 pt to 4 pt 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.

Petroleum Crop Oil Concentrate (COC) or Modified Seed Oil (MSO)

- Apply at 1% volume/volume (1 gal per 100 gal spray solution) or 2% volume/volume under arid conditions.
- 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. Consult separate 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), such as 28%N or 32%N, or 2 lb/acre of a spray-grade ammonium sulfate (AMS). Use 4 qt/acre UAN or 4 lb/acre AMS under arid conditions.

GROUND APPLICATION

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

For flat-fan nozzles, use a spray volume of at least 5 gal per acre (GPA).

For flood nozzles on 30" spacing, use flood nozzles no larger than TK10 (or the equivalent), a pressure of at least 30 psi and a spray volume of at least 10 GPA only. For 40" nozzle spacing, use at least 13 GPA; for 60" spacing use at least 20 GPA. It is essential to overlap the nozzles 100% for all spacings.

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 at 1 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.

See the Spray Drift Management section of this label for additional information.

PRODUCT MEASUREMENT

This product can be measured using this product's volumetric measuring cylinder included in the case. 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 at 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 livestock in treated areas. In addition, do not feed forage or hay from treated areas to livestock (harvested straw may be used for bedding and/or feed).

MIXING INSTRUCTIONS

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 dispersed, at least 5 minutes.
4. Once this product is fully dispersed, maintain agitation and continue filling tank with water. This product should be thoroughly mixed with water before adding any other material.
5. As the tank is filling, add tank mixture partners (if desired) then add the required volume of spray adjuvant. Always add spray adjuvant last. Antifoaming agents may be used. Do not use with spray additives that alter the pH of the spray solution below pH 6.0 as rapid product degradation can occur. Spray solutions of pH 7.0 and higher allow for optimum stability of this product.
6. If the mixture is not continuously agitated, settling will occur. 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 mixture partner are to be applied in multiple loads, pre-slurry this product in clean water prior to adding to the tank. This will prevent the tank mixture partner from interfering with the dissolution of this product.

SPRAY EQUIPMENT

For specific application equipment, refer to the manufacturer's directions 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 Spray Drift Management section of label.

Continuous agitation is required to keep this product in suspension.

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 six steps outlined in the After Spraying this product section of this label.

AT THE END OF THE DAY

When multiple loads of this product herbicide are applied, it is recommended that 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.

AFTER SPRAYING THIS PRODUCT AND BEFORE SPRAYING CROPS OTHER THAN WHEAT, BARLEY AND TRITICALE

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

1. Drain tank; thoroughly rinse spray tanks, boom, and hoses with clean water. Physically remove any visible deposits.
2. Fill the tank with clean water and 1 gal of household ammonia* (contains 3% active ingredient) for every 100 gal of water. Flush the hoses, boom, and nozzles with the cleaning solution. Then add more water to completely fill the tank. Circulate the cleaning solution through the tank and hoses for at least 15 min. Flush the hoses, boom, and nozzles again with the cleaning solution, and then drain the tank.
3. Remove the nozzles and screens and clean separately in a bucket containing cleaning agent and water.
4. Repeat step 2.
5. Rinse the tank, boom, and hoses with clean water.
6. If only ammonia is used as a cleaner, the rinsate solution may be applied back to the crop(s) recommended on this label. Do not exceed the maximum-labeled use rate. If other 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.

* Equivalent amounts of an alternate-strength ammonia solution or a J. Oliver Products-approved cleaner can be used in the cleanout procedure. Carefully read and follow the individual cleaner instructions. Consult your Ag dealer, applicator, or J. Oliver Products representative for a listing of approved cleaners.

Notes:

PRECAUTION: Do not use chlorine bleach with ammonia because dangerous gases will form.

Do not clean equipment in an enclosed area.

1. Steam-cleaning aerial spray tanks is recommended prior to performing the above cleanout procedure to facilitate the removal of any caked deposits.
2. When this product is tank mixed with other pesticides, cleanout procedures for each product should be examined and the most rigorous procedure should be followed.
3. In addition to this cleanout procedure, all precleanout guidelines on subsequently applied products should be followed as per the individual product labels.
4. Where routine spraying practices include shared equipment frequently being switched between applications of this product and applications of other pesticides to this product sensitive crops during the same spray season, it is recommended that a sprayer be dedicated to this product to further reduce the chance of crop injury.

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.

AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR.

IMPORTANCE OF DROPLET SIZE

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 airstream 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 AND HEIGHT

- **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.
- **Boom Height (aircraft)** - Application more than 10 ft above the canopy increases the potential for spray drift.
- **Boom Height (ground)** - Setting the boom at the lowest height which provides uniform coverage reduces the exposure of droplets to evaporation and wind. The boom should remain level with the crop and have minimal bounce.

WIND

Drift potential increases at wind speeds of less than 3 mph (due to variable direction and 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 effect 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 surface temperature inversion. Surface inversions restrict vertical air mixing, which causes small suspended droplets to remain close to the ground and move laterally in a concentrated cloud. Surface 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 a surface 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 directions available in your area.

INTEGRATED PEST MANAGEMENT

J. Oliver Products recommends the use of Integrated Pest Management (IPM) programs to control pests. This product may be used as part of an Integrated Pest Management (IPM) program which can include biological, cultural, and genetic practices aimed at preventing economic pest damage. Application of this product should be based on IPM principles and practices including 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 or site systems in your area.

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RESTRICTIONS

- Do not graze treated fields or feed treated forage or hay (harvested straw may be used for bedding and/or feed).
- Varieties of wheat (including durum), barley and triticale may differ in their response to various herbicides. Consult your state experiment station, university, or extension agent as to crop sensitivity to any herbicide. If no information is available, limit the initial use to a small area.
- Under certain conditions such as heavy rainfall, prolonged cold weather, or wide fluctuations in day/night temperatures prior to or soon after this product 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 the "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, low fertility, water-saturated soil, disease, or insect damage, as crop injury may result. Risk of injury is greatest when 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 underseeded with another crop.
- Dry, dusty field conditions may result in reduced control in wheel track areas.
- Injury to or loss of 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.
- Injury to or loss of adjacent sensitive crops and vegetation may result from failure to observe the following:
 - 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 or barley.

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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.

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

CONTAINER DISPOSAL: Nonrefillable containers. Do not refill or reuse this container. **For Plastic Containers:** Triple 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. Then offer for recycling or reconditioning, if available, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by State and local authorities, by burning. If burned, 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 Fiber Drums With Liners: Completely empty liner 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 liner in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. If drum is contaminated and cannot be reused, dispose of in the same manner. **For Bags Containing Water Soluble Packets:** Do not reuse the outer box or the resealable plastic bag. When all water-soluble packets are used, the outer packaging should be clean and may be disposed of in a sanitary landfill or by incineration, or if allowed by State and local authorities, by open burning. If burned, stay out of smoke. If the resealable plastic bag contacts the formulated product in any way, the bag must be triple rinsed with clean water. Add the rinsate to the spray tank and dispose of the outer wrap as described above. **For Metal Containers (non aerosol):** Triple rinse container (or equivalent) promptly after emptying. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. **For Paper and Plastic Bags:** Completely empty bag 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 empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

When packaged in returnable and/or refillable containers:

Refillable container (250 gallon & bulk): Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from the container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

Offer for recycling or reconditioning, if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by open burning, if allowed by state and local authorities. If burned, keep out of smoke.

Container Disposal for Bulk Containers: When this container is empty, replace the cap and seal all openings that have been opened during use; and return the container to the point of purchase or to a designated location named at time of purchase of this product. The container must only be refilled with this pesticide product. DO NOT REUSE THE CONTAINER FOR ANY OTHER PURPOSE. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn-out threads and closure devices. Check for leaks after refilling and before transporting. Do not transport if this container is damaged or leaking. If the container is damaged, leaking or obsolete, contact J. Oliver Products. If not returned to the point of purchase or to a designated location, triple rinse emptied container and offer for recycling. Disposal of this container must be in compliance with state and local regulations.

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, call 1-800-441-3637, day or night.

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WARRANTY DISCLAIMER

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