

66222-138

7/27/2012

10/14



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON D C 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

Kristen B Knox  
Makhteshim Agan Of North America, Inc  
4515 Falls of Neuse Road, Suite 300  
Raleigh, NC 27609

JUL 27 2012

Subject Label Notification, Per PR-Notice 98-10  
Oryzalin 4 AS  
EPA Reg No 66222-138  
Date Submitted May 15, 2012  
Proposed Alternate Brand Name Fugitive

Dear Ms Knox

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 dated May 15, 2012 for the product referenced above. 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 our records.

If you have any questions regarding this letter, please contact Jasmine Branch at (703) 347-0351 or [branch.jasmine@epa.gov](mailto:branch.jasmine@epa.gov)

Sincerely,

A handwritten signature in black ink, appearing to read "Kathryn Montague".

Kathryn Montague  
Product Manager 23  
Herbicide Branch  
Registration Division (7505P)



United States  
Environmental Protection Agency  
Washington DC 20460

 Registration  
 Amendment  
 Other

OPP Identifier Number

### Application for Pesticide - Section I

1 Company/Product Number 66222-138	2 EPA Product Manager Kathryn Montague	3 Proposed Classification <input checked="" type="checkbox"/> None <input type="checkbox"/> Restricted
4 Company/Product (Name) Oryzalin 4 AS	PM# Product Manager 23	
5 Name and Address of Applicant (Include ZIP Code) Makhteshim Agan of North America Inc 3120 Highwoods Blvd Suite 100 Raleigh NC 27604 <input checked="" 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 _____	

NOTIFICATION

JUL 27 2012

### Section - II

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

### Explanation Use additional page(s) if necessary (For section I and Section II)

Notification of alternate brand name Fugitive This notification is consistent with the provisions of PRN 98 10 and EPA regulations at 40 CFR 152 46 No other changes have been made to the labeling or the confidential statement of formula for this product I understand that it is a violation of 18 USC § 1001 to willfully make any false statements to the EPA I further understand that if this notification is not consistent with the terms of PRN 98 10 and 40 CFR 152 46 this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under 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	If Yes Unit Packaging wgt No per container		<input type="checkbox"/> Metal <input type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify) _____
* Certification must be submitted		If Yes Package wgt	No per container		
3 Location of Net Contents Information <input type="checkbox"/> Label <input type="checkbox"/> Container		4 Size(s) Retail Container		5 Location of Label Directions	
6 Manner in Which Label is Affixed to Product <input checked="" type="checkbox"/> Lithograph Paper glued Stenciled				<input type="checkbox"/> Other _____	

### Section - IV

1 Contact Point (Complete items directly below for identification of individual to be contacted if necessary to process this application)		
Name Kelly Wall Powell	Title Regulatory Specialist	Telephone No (Include Area Code) 919 256 9357
<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  (Stamp)
2 Signature 	3 Title Product Registration Manager	
4 Typed Name Kristen B Knox	5 Date May 15 2012	

30x14

May 15, 2012

Document Processing Desk (NOTIF)  
Registration Division (7505P)  
Office of Pesticide Programs  
U S EPA, One Potomac Yard  
2777 S Crystal Drive, Room S-4900  
Arlington, VA 22202

Attn Kathryn Montague, Product Manager 23, Herbicide Branch  
Phone 703-305-1243

RE Oryzalin 4 A S (EPA Reg No 66222-138)  
Notification of ABN as allowed per PRN 98-10

Dear Ms Montague

We are notifying the Agency that Makhteshim Agan of North America, Inc is submitting an alternate brand name for Oryzalin 4 A S (EPA Reg No 66222-138) The new ABN will be called Fugitive

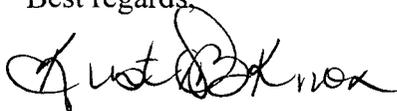
This notification is consistent with the provisions of PR Notice 98-10 and EPA regulation 40 CFR 152 46, and no other changes have been made to the labeling or the confidential statement of formula for this product I understand that it is a violation of 18 U S C § 1001 to willfully make any false statement to the EPA I further understand that if this notification is not consistent with the terms of PR Notice 98-10 and 40 CFR 152 46, this product may be in violation of FIFRA, and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA

In support of this submission, the following documents are attached

- Application for Pesticide Registration (EPA Form 8570-1),
- One annotated copy of the printed label, and
- Two clean copies of the printed label

Should you have any questions regarding this notification, please contact me at 919-256-9337 or by email at [kknox@manainc.com](mailto:kknox@manainc.com)

Best regards,



Kristen B Knox  
Product Registration Manager

www.manainc.com

P (919) 256-9300  
F (919) 256 9308

3120 Highwoods Blvd  
Suite 100  
Raleigh, NC 27604



40914

# ANNOTATED

# Oryzalin 4 A.S.

NOTIFICATION

JUL 27 2012

Herbicide

(Alternate Brand Name Fugitive)

A PREEMERGENCE SURFACE-APPLIED HERBICIDE FOR THE CONTROL OF MANY ANNUAL GRASSES AND CERTAIN BROADLEAF WEEDS IN CITRUS, FRUIT AND NUT TREES, BERRIES, VINEYARDS, AND CHRISTMAS TREE PLANTATIONS

**ACTIVE INGREDIENT**

Oryzalin 3 5-dinitro-N4 N4 dipropylsulfanilamide

**% BY WT**

41.0%

**OTHER INGREDIENTS**

59.0%

**TOTAL** 100.0%

Contains 4 pounds of active ingredient per gallon

**KEEP OUT OF REACH OF CHILDREN**

## CAUTION

**Manufactured for**

Makhteshim Agan of North America Inc  
4515 Falls of Neuse Rd Suite 300  
Raleigh NC 27609

EPA Reg No 66222 138

EPA Est No [REDACTED]

**NET CONTENTS \_\_\_\_\_ GALLONS**

### FIRST AID

<b>IF ON SKIN OR CLOTHING</b>	<ul style="list-style-type: none"> <li>Take off contaminated clothing</li> <li>Rinse skin immediately with plenty of water for 15-20 minutes</li> <li>Call a poison control center or doctor for treatment advice</li> </ul>
<b>IF IN EYES</b>	<ul style="list-style-type: none"> <li>Hold eye open and rinse slowly and gently with water for 15 20 minutes</li> <li>Remove contact lenses if present after the first 5 minutes then continue rinsing eye</li> <li>Call a poison control center or doctor for treatment advice</li> </ul>
<b>IF SWALLOWED</b>	<ul style="list-style-type: none"> <li>Call a poison control center or doctor immediately for treatment advice</li> <li>Have person sip a glass of water if able to swallow</li> <li>Do not induce vomiting unless told to do so by a poison control center or doctor</li> <li>Do not give anything by mouth to an unconscious person</li> </ul>
<b>IF INHALED</b>	<ul style="list-style-type: none"> <li>Move person to fresh air</li> <li>If person is not breathing call 911 or an ambulance then give artificial respiration preferably by mouth-to-mouth if possible</li> <li>Call a poison control center or doctor for further treatment advice</li> </ul>
<p>Have the product container or label with you when calling a poison control center or doctor or going for treatment You may also contact PROSAR at 1-877-250-9291 for emergency medical treatment information</p>	

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

#### PERSONAL PROTECTIVE EQUIPMENT (PPE)

**Applicators and other handlers must wear**

- Long sleeved shirt and long pants

# ANNOTATED

- Chemical resistant gloves
- Shoes plus socks
- Mixers and loaders must wear a chemical-resistant apron in addition to other PPE

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

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

**USER SAFETY RECOMMENDATIONS**

**Users should**

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

**ENVIRONMENTAL HAZARDS**

This pesticide is toxic to fish. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters. Cover or incorporate spills.

**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 24 hours.

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

Workers may enter treated areas without required PPE during the reentry interval following 1/2-1 inch of rainfall or irrigation if they are performing tasks that do not involve contact with the soil subsurface, otherwise 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
- Shoes plus socks

**PRODUCT INFORMATION**

Read all directions for use carefully before applying.

# ANNOTATED

Oryzalin 4 A S herbicide is a preemergence surface applied herbicide for the control of many annual grasses and certain broadleaf weeds in citrus fruit and nut trees berries vineyards and Christmas trees plantations Oryzalin 4 A S controls susceptible annual weeds by disrupting plant growth processes during germination Oryzalin 4 A S may be applied in liquid sprays of water or liquid fertilizer Oryzalin 4 A S may be tank mixed with other herbicides to control existing vegetation or improve the spectrum of weeds controlled Oryzalin 4 A S alone does not control established weeds

Oryzalin 4 A S may be applied before or after transplanting of the crop If applied prior to transplanting (1) disturbance of surface soil should be minimized to prevent loss of weed control and (2) exposure of the roots of transplants to treated soil should be minimized to avoid any possibility of crop injury

## USE PRECAUTIONS AND RESTRICTIONS

- Do not graze or feed forage from treated fields or orchards to livestock
- Poor weed control may result if directions are not carefully followed
- Do not over apply Oryzalin 4 A S Over application may result in crop injury or soil residue
- Do not plant any root crop for 12 months following an Oryzalin 4 A S application
- Do not use Oryzalin 4 A S on soils containing more than 5% organic matter
- Apply Oryzalin 4 A S directly to the soil surface in orchards or vineyards
- Carefully follow label directions to avoid poor weed control or crop injury
- Chemigation See instructions for chemigation in the **APPLICATION METHODS** section of this label
- Do not aerially apply this product

## ROTATION CROP INTERVAL

To avoid crop injury a 24-month rotational interval is suggested when rotating from tree and vine crops to row crops

## SOIL PREPARATION

Optimum herbicidal activity occurs when Oryzalin 4 A S is applied to the soil surface Prior to application existing unwanted vegetation should be destroyed by tillage or use of contact or translocated herbicides Crop or weed residues pruning and trash should be thoroughly mixed into the soil by tillage equipment or removed before treatment Soil should be in good tilth and free of clods at the time of application

## ACTIVATION AND CULTIVATION

A single 1/2-1 inch rainfall or sprinkler irrigation is required to activate Oryzalin 4 A S and move the herbicide into the zone of weed germination Rainfall or irrigation of 1 inch or more is needed to activate Oryzalin 4 A S on fine-textured high organic matter soils If weeds begin to emerge a shallow cultivation to a depth of 1-2 inches will destroy existing weeds and place Oryzalin 4 A S in the zone of weed germination

## MIXING DIRECTIONS

### Oryzalin 4 A S Alone

Oryzalin 4 A S may be applied in water or most liquid fertilizer materials Prior to mixing Oryzalin 4 A S in liquid fertilizer refer to **TESTING FOR COMPATIBILITY IN LIQUID FERTILIZERS** section of this label for test procedures to determine compatibility with the fertilizer product to be used The combination of Oryzalin 4 A S with solution and suspension-type fertilizers provides annual weed control equal to Oryzalin 4 A S applied in water Individual state regulations relating to liquid fertilizer mixing registration labeling and application are the responsibility of the individual and/or company offering the fertilizer and chemical mixture for sale

Start with a clean spray tank Fill the sprayer to 1/3-1/2 of the required spray volume Start agitation shake the container well add the correct amount of Oryzalin 4 A S continue agitation and fill spray tank to required spray volume Maintain continuous agitation from mixing through application

**Precaution** Do not allow the mixture to siphon back into the water source

### Oryzalin 4 A S in Tank Mix

Vigorous continuous agitation during mixing filling and throughout application is required for all tank mixes Sparger pipe agitators generally provide the most effective agitation in spray tanks To prevent foaming in the spray tank avoid stirring or splashing air into the spray mixture

# ANNOTATED

Oryzalin 4 A S may be tank mixed with label rates of other products and applied with water or most liquid fertilizer materials provided (1) the tank mix product is labeled for the timing and method of application for the use site to be treated (2) tank mixing is not prohibited by the label of the tank mix product and (3) A jar test is performed to ensure the compatibility of products to be used in tank mixture

## TANK MIXING PRECAUTIONS

- Read carefully and follow all applicable use directions precautions and limitations on the respective product labels
- Do not exceed application rates specified on this label
- For products packaged in water soluble packaging do not tank mix with products containing boron or mix in equipment previously used to apply a product mixture containing boron unless the tank and spray equipment has been thoroughly cleaned

**Tank Mix Compatibility Testing** Perform a jar test prior to tank mixing to ensure compatibility of Oryzalin 4 A S and other products Use a clear glass quart jar with lid and mix the tank mix ingredients in their relative proportions Invert the jar containing the mixture several times and observe the mixture for approximately 1/2 hour If the mixture balls-up forms flakes sludges oily films or layers or other precipitates it is not compatible and the tank mix combination should not be used

**Mixing Order (Tank Mixing with Water)** Fill the spray tank to 1/4-1/3 of the total spray volume Start agitation Add different formulation types in the order below allowing time for complete mixing and dispersion after addition of each product Allow extra mixing and dispersion time for dry flowable products

- 1 Add dry flowables wettable powders Oryzalin 4 A S or other aqueous suspensions flowables and water-based solutions
- 2 Maintain agitation and fill spray tank to 3/4 of total spray volume Then add any emulsifiable concentrates Finish filling the spray tank Maintain continuous agitation during mixing final filling and throughout application If spraying and agitation must be stopped before the spray tank is empty the materials may settle to the bottom Settled materials must be resuspended before spraying is resumed A sparger agitator is particularly useful for this purpose Settled material may be more difficult to resuspend than when originally mixed

**Tank Mixing with Liquid Fertilizer** Prior to mixing Oryzalin 4 A S with other products in liquid fertilizer refer to the tank mix product manufacturer's label to determine if application in liquid fertilizer is allowed Also refer to **TESTING FOR COMPATIBILITY IN LIQUID FERTILIZERS** section of this label for testing procedures to determine tank mix compatibility with the liquid fertilizer product to be used The combination of Oryzalin 4 A S with solution and suspension-type fertilizers provides annual weed control equal to Oryzalin 4 A S applied in water Individual state regulations relating to liquid fertilizer mixing registration labeling and application are the responsibility of the individual and/or company offering the fertilizer and chemical mixture for sale Read and follow all label instructions for each material to be added to the spray tank

Vigorous continuous agitation is required for all tank mixes Sparger pipe agitators generally provide the best agitation in spray tank To prevent foaming keep the end of the fill pipe below the surface of the water in the spray tank during filling to prevent air from being stirred or splashed into the mixture

**Mixing Order (Tank Mixing With Liquid Fertilizer)** Fill the spray tank to 3/4 of the total spray volume required Start agitation Add different formulation types in the following order allowing time for complete mixing and dispersion after addition of each product allow extra mixing and dispersion time for dry flowable products Dry flowables wettable powders Oryzalin 4 A S or other aqueous suspensions flowables water-based solutions and any emulsifiable concentrates

Finish filling spray tank Maintain continuous agitation during mixing final filling and throughout application If spraying and agitation must be stopped before the spray tank is empty the materials may settle to the bottom Settled materials must be resuspended before spraying is resumed A sparger agitator is particularly useful for this purpose Settled materials may be more difficult to resuspend than when originally mixed

**Premixing** When tank mixing initial mixing and dispersion of certain dry flowable or wettable powder products may be improved by premixing with water (slurrying) Follow product label instructions for each material Adding

# ANNOTATED

the slurred material to the spray tank through a 20–35 mesh wetting screen will help assure good initial dispersion. Line screens in the tank through a 20–35 mesh wetting screen will help assure good initial dispersion. Line screens in the tank should be no finer than 50 mesh (100 mesh is finer than 50 mesh).

## TESTING FOR COMPATIBILITY IN LIQUID FERTILIZERS

Oryzalin 4 A S alone or in combination with dry flowable (DF) wettable powder (WP) aqueous suspension (AS) flowable (F) liquid (L) solution (S) or emulsifiable concentrate (EC) formulations may not combine properly with some liquid fertilizer materials. Small quantities of such mixtures should always be tested before full-scale mixing. Follow the testing procedure below to determine if a compatibility agent is needed or which compatibility agent works best in your liquid fertilizer plus herbicide mixture.

### Testing Procedure

- 1 Add 1 pint of liquid fertilizer to 1 quart glass jar
- 2 Add 1–4 teaspoonfuls of DF WP Oryzalin 4 A S other AS formulations F or L formulations depending on mixing ratio required to the liquid fertilizer. Close the jar and shake until evenly dispersed after addition of each formulation. If dry flowable or wettable powder formulations do not disperse well, it may be necessary to slurry the materials in a small amount of water before addition to the liquid fertilizer.
- 3 After dispersing the materials in step 2, add any S formulations to the jar and shake well. Finally, add EC formulations to the mixture and shake well. Observe the jar for about 10 minutes. If materials rise to the surface and form a thick layer that will not redisperse when agitated, a compatibility agent is needed. If the mixture is easily redispersed with slight agitation, a compatibility agent is not required. Good agitation must be provided to maintain dispersion in the spray tank from mixing through application.
- 4 If the need for a compatibility agent is demonstrated in step 3, follow the procedure outlined below. Using a clean clear plastic or glass container, repeat step 1 above and add ½ teaspoon of the compatibility agent to the liquid fertilizer mixture. Shake well and then repeat steps 2 and 3.

An effective compatibility agent will cause the mixture to remain uniformly mixed with little or no separation for 1/2 hour or longer. If slight separation occurs, 2–3 inversions of container should be sufficient to uniformly redisperse the mixture. If layers form which will not disperse, try adding additional compatibility agent or use an alternative compatibility agent to achieve a uniform mixture. Use a clean jar in each test. A compatible mixture will have a uniform appearance and will be relatively easy to redisperse with gentle agitation of the jar.

## COMPATIBILITY AGENTS

Use a phosphate ester-type surfactant designed for use with liquid fertilizers mixed at rates as low as 1½– 2 pints per ton of liquid fertilizer. This type of surfactant usually doesn't work well as a compatibility agent for tank mixes in plain water. Add the compatibility agent just before adding herbicides. Read and follow label directions for the compatibility agent.

## APPLICATION METHODS

### Ground Broadcast Application

Apply Oryzalin 4 A S directly to the soil surface of the orchard or vineyard in a total spray volume of 20–40 gallons per acre (broadcast basis) using any properly calibrated low pressure herbicide sprayer that will apply the spray uniformly. Use herbicide nozzle tips and screens no finer than 50 mesh for nozzle and inline strainers. As the amount of spray volume per acre decreases, the importance of accurate calibration and uniform application increases. Check the sprayer daily to insure proper calibration and uniform application. Avoid boom overlaps that will increase rates above labeled rates.

### Band Application

For band application, use the following formula to calculate the required amount of product per acre:

$$\frac{\text{Band Width (inches)}}{\text{Row Width (inches)}} \times \text{Broadcast rate per acre} = \text{Amount required per acre}$$

## CHEMIGATION

Oryzalin 4 A S may be applied through properly equipped chemigation systems for weed control in fruit and nut orchards or vineyards. Read and follow all label instructions outlined below concerning chemigation before applying Oryzalin 4 A S by this method.

# ANNOTATED

**Chemigation Use Precautions** Apply this product only through solid set or hand move systems designed to distribute sprinkler irrigation beneath the tree canopy. Solid set systems utilizing tall risers for overhead application are excluded except for dormant season applications of Oryzalin 4 A S. Do not apply this product through any other type of irrigation system.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water.

If you have questions about calibration you should contact state extension specialists, equipment manufacturers, or other experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a 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.

**Sprinkler Chemigation Directions** The following directions must be followed for all sprinkler irrigation systems (solid set and hand move systems):

- 1 The 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 back flow.
- 2 The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- 3 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.
- 4 The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- 5 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 that pesticide distribution is adversely affected.
- 6 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.
- 7 Do not apply when wind speed favors drift beyond the area intended for treatment.
- 8 Oryzalin 4 A S should be injected continuously throughout the chemigation period. The chemigation metering pump should be checked periodically during application to insure proper operation.
- 9 The injection metering pump must be calibrated as specified by the manufacturer.
- 10 During chemigation, maintain agitation in supply tank at all times.
- 11 Oryzalin 4 A S may cause some staining of plastic hoses and tanks.
- 12 Apply Oryzalin 4 A S in sprinkler irrigation equal to 1/2 to 1 inch of water.

**Chemigation System Calibration** Sample calculation for use of Oryzalin 4 A S in a chemigation system:

- Assume in this example 35 acres are to be covered by a chemigation treatment.
- Product required assuming 1 quart per acre is 35 quarts (8.75 gallons).
- Prepare a mixture containing 1 part water and 1 part Oryzalin 4 A S by adding 8.75 gallons of product to the supply tank containing an equal amount of water (total volume = 17.5 gallons).
- Adjust the injection system to deliver 17.5 gallons during the time required to apply 1 inch of water to 35 acres.
- If the irrigation system requires 5 hours to apply 1 inch of water to 35 acres, the injection rate is 3.5 gallons per hour and is calculated as follows:  
 $17.5 \text{ gallons} / 5 \text{ hours} = 3.5 \text{ gallons/hour}$   
 $[3.5 \text{ gallons} = 448 \text{ fluid ounces (fl oz)}]$

Proper calibration requires the injection pump to be adjusted to deliver 7.47 fl oz per minute and is calculated as follows:

$$448 \text{ fl oz per hr} / 60 \text{ min per hr} = 7.47 \text{ fl oz/min}$$

# ANNOTATED

**Chemigation Mixing Directions** The injection mixture (slurry) with minimum volume may be prepared by adding the required amount of Oryzalin 4 A S to an equal amount of water in the injection tank (ratio Oryzalin 4 A S to water = 1 1) Meter the mixture into the irrigation system during the entire irrigation period Additional dilution of Oryzalin 4 A S may be necessary for accurate calibration of equipment designed to deliver a larger injection volume per hour Maintain supply tank agitation throughout the irrigation period

Undiluted Oryzalin 4 A S should not be injected into chemigation systems

## WEEDS AND GRASSES CONTROLLED

### ANNUAL GRASSES

Common Name	Scientific Name
Barley little	<i>Hordeum pusillum</i>
Barnyardgrass (water grass)	<i>Echinochloa crus-galli</i>
Bluegrass annual (poa)	<i>Poa annua</i>
Brachiaria (signalgrass)	<i>Brachiaria spp</i>
Browntop panicum	<i>Panicum fasciculatum</i>
Crabgrass	<i>Digitaria spp</i>
(large crabgrass)	
(smooth crabgrass)	
crowfootgrass	<i>Dactyloctenium aegyptium</i>
cupgrass	<i>Eriochloa gracilis</i>
downy brome	<i>Bromus tectorum</i>
Fall panicum	<i>Panicum dichotomiflorum</i>
(spreading panicgrass)	
foxtails	<i>Setaria spp</i>
(bottlegrass)	
(bristlegrass)	
(giant foxtail)	
(green foxtail)	
(pigeongrass)	
(robust foxtail)	
(yellow foxtail)	
guineagrass	<i>Panicum maximum</i>
(narrowleaf panicum)	
goosegrass	<i>Eleusine indica</i>
johnsongrass (seedling only)	<i>Sorghum halepense</i>
junglerice	<i>Echinochloa colonum</i>
lovegrass Mexican	<i>Eragrostis mexicana</i>
lovegrass orcutt	<i>Eragrostis orcuttiana</i>
oat wild	<i>Avena fatua</i>
ryegrass annual (Italian)	<i>Lolium multiflorum</i>
sandbur field	<i>Cenchrus incertus</i>
sprangletop red	<i>Leptochloa filiformis</i>
Texas panicum	<i>Panicum texanum</i>
(buffalograss)	
(Coloradograss)	
witchgrass	<i>Panicum capillare</i>

### ANNUAL BROADLEAF WEEDS

Common Name	Scientific Name
Carpet weed	<i>Mollugo verticillata</i>
Chickweed	<i>Stellaria media</i>
Cudweed	<i>Gnaphalium chilense</i>
Fiddleneck coast	<i>Amsinckia intermedia</i>

# ANNOTATED

Florida pusley (Florida purslane) (Mexican clover) (pusley)	<i>Richardia scabra</i>
henbit	<i>Lamium amplexicaule</i>
knotweed prostrate	<i>Polygonum aviculare</i>
lambsquarters	<i>Chenopodium album</i>
pigweeds (carelessweed) (prostrate pigweed) (redroot pigweed) (rough pigweed) (smooth pigweed) (spiny pigweed) (tumble pigweed)	<i>Amaranthus spp</i>
puncturevine	<i>Tribulus terrestris</i>
purslane common	<i>Portulaca oleracea</i>
rockpurslane redmaids	<i>Calandrinia caulescens</i>
shepherdspurse	<i>Capsella bursa-pastoris</i>

**ORYZALIN 4 A S PROVIDES PARTIAL CONTROL OR SUPPRESSION OF**

<b>Common Name</b>	<b>Scientific Name</b>
Filaree redstem	<i>Erodium cicutarium</i>
Filaree whitestem	<i>Erodium moschatum</i>
Groundsel common	<i>Senecio vulgaris</i>
Ladysthumb	<i>Polygonum persicaria</i>
Lettuce prickly	<i>Lactuca serriola</i>
Mallow common	<i>Malva neglecta</i>
Milkweed climbing	<i>Sarcostemma cynanchoides</i>
Morningglory annual	<i>Ipomoea spp</i>
Mustard black	<i>Brassica nigra</i>
Mustard wild	<i>Sinapis arvensis</i>
Nightshade black	<i>Solanum nigrum</i>
Prickly sida (teaweed)	<i>Sida spinosa</i>
Ragweed common	<i>Ambrosia artemisiifolia</i>
Ragweed giant	<i>Ambrosia trifida</i>
Rocket London	<i>Sisymbrium irio</i>
Smartweed annual	<i>Polygonum spp</i>
Sowthistle annual	<i>Sonchus oleraceus</i>
Spurge prostrate	<i>Euphorbia humistrata</i>
Spurge spotted	<i>Euphorbia maculata</i>
Velvetleaf	<i>Abutilon theophrasti</i>

**CROP USE INSTRUCTIONS**

**TREE AND VINE CROPS – CITRUS, STONE FRUIT, POME FRUIT, AND NUT TREES, BERRIES AND VINEYARDS (NON-BEARING AND BEARING)**

Apply Oryzalin 4 A S as a preemergence treatment to control annual grasses and broadleaf weeds listed in **PRODUCT INFORMATION** section

**For orchard crops including citrus, pome fruits, stone fruits, and tree nuts, apply product only as a strip treatment in the tree rows, do not apply to row middles or drive rows**

**Crop Listing** Oryzalin 4 A S may be used in the following crop groupings

<b>Citrus Fruits Crop Group such as</b>	<b>Pome &amp; Stone Fruits Crop Group such as</b>	<b>Tree Nuts Crop Group such as</b>
citrus citron	apple	almond

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citrus hybrids  
 grapefruit  
 kumquat  
 lime  
 lemon  
 mandarin  
 (tangerine)  
 orange  
 pummelo

apricot  
 cherry  
 crabapple  
 loquat  
 mayhaw  
 nectarine  
 peach  
 pear  
 plum  
 prune  
 quince

chestnut  
 chinquapin  
 filbert  
 hickory nut  
 macadamia nut  
 pecan  
 pistachio  
 walnut

**Berries Crop Group**  
**such as**

blackberry  
 blueberry\*  
 boysenberry  
 currant  
 dewberry  
 elderberry  
 gooseberry  
 loganberry  
 raspberry

**Vineyards**

grapes

\*Do not apply Oryzalin 4 A S to lowbush blueberries

**In addition to the crops within crop groupings listed above, Oryzalin 4 A S may be used in the following crops** avocado fig guava kiwi fruit olive papaya and pomegranate

**Broadcast Application Rates**

Soil Texture	Length of Control	Oryzalin 4 A S (qt/acre)	Minimum Time Between Applications (months)	Total Amount Allowed Per Year (qt/acre)
All Soil Textures	Short Term (2-4 months)	2	2.5	12
	Long Term (6-8 months)	4	2.5	12
	(8-12 months)	6	2.5	12

**Chemigation**

Oryzalin 4 A S may be applied through properly equipped chemigation systems for weed control in fruit and nut orchards and vineyards. Refer to the **CHEMIGATION** section of this label for use directions. Do not apply Oryzalin 4 A S by chemigation unless use directions are carefully followed.

Apply Oryzalin 4 A S by chemigation prior to weed germination or immediately after existing weeds have been controlled. Control existing unwanted vegetation by tillage or with a contact or translocated herbicide. Use broadcast application rates for Oryzalin 4 A S alone. Apply in sprinkler irrigation equal to 1/2-1 inch of water on medium- to fine-textured or high organic matter soils.

**Oryzalin 4 A S Tank Mix Instructions**

To broaden the spectrum of weed control, Oryzalin 4 A S may be applied in tank mix combination with labeled rates of other herbicide products including but not limited to Goal Gramoxone Super Princep (Simazine) Roundup/glyphosate or Solicam herbicide. Performance and risk of carryover from tank mixed products used in combination with Oryzalin 4 A S at labeled rates is the same as when each product is used separately.

**Non-Bearing Tree and Vine Crops** For additional broad spectrum control of broadleaf weeds in non-bearing fruit and nut trees, berries, and vineyards, Oryzalin 4 A S may be applied in tank mix combination with labeled

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rates of Gallery 75 Dry Flowable herbicide Non-bearing crops are defined as plants that will not bear fruit for at least one year after treatment

Follow tank mixing instructions in the **MIXING DIRECTIONS** section of this label when mixing Oryzalin 4 A S with other products

Users should always consult the manufacturer s label for the products to be tank mixed with Oryzalin 4 A S for specific information on use rates additional weeds controlled rotational crop restrictions or risk of carryover special tank mix instructions additional use directions precautions and limitations

## CHRISTMAS TREE PLANTATIONS

### Oryzalin 4 A S Alone

Apply Oryzalin 4 A S as a directed spray to the soil surface or as an overtop spray to established plantings of field grown Christmas tree species including fir (*Abies* spp ) pine (*Pinus* spp ) and spruce (*Picea* spp ) Do not apply to Douglas-fir (*Pseudotsuga menziesii*) Do not apply to seedbeds or seedling transplant beds Apply only to established plantings Established plantings are defined as those that have been transplanted into their final growing location for a sufficient period of time to allow the soil to be firmly settled around the roots from packing and rainfall or irrigation Follow all instructions provided in the **PRODUCT INFORMATION** section of this label

### Broadcast Application Rates

Length of Control	Amount of Oryzalin		Minimum Time Between Applications (months)	Total Amount Allowed Per Year (qt/acre)
	(qt/acre)	(fl oz/ 1000 sq ft)		
2-4 months	2	1.5	2	8
4-8 months	4	3	2	8

### Tank Mix Combinations

Tank mix combinations of Oryzalin 4 A S plus other labeled herbicides may be used as directed sprays or overtop sprays in established Christmas tree plantings When applied according to use directions these tank mixes will provide control of susceptible weed species listed on the respective product labels Refer to label of the product to be tank mixed with Oryzalin 4 A S for specific use directions precautions and limitations before use

### Oryzalin 4 A S Herbicide Plus Roundup/Glyphosate Herbicide

Apply tank mix combinations of Oryzalin 4 A S plus Roundup only as directed sprays in Christmas tree plantings When applied according to use directions Oryzalin 4 A S plus Roundup will provide postemergence control of susceptible weed species listed on the label for Roundup and residual preemergence control of susceptible weed species listed on the label for Oryzalin 4 A S Refer to the label for Roundup for specific use directions precautions and limitations before use

### Precautions

- Do not apply sprays containing Roundup over the top of Christmas tree plantings
- Extreme care must be exercised to avoid contact of spray containing Roundup with foliage and stems of Christmas trees or severe damage or death may result

### STORAGE AND DISPOSAL

Do not contaminate water food or feed by storage or disposal

**PESTICIDE STORAGE** Store in original container only In case of leak or spill use absorbent materials to contain liquids and dispose as waste

**PESTICIDE DISPOSAL** Wastes resulting from use of this product may be disposed of on site or at an approved waste disposal facility

**CONTAINER DISPOSAL**

**Nonrefillable Container (five gallons or less)** Nonrefillable container Do not reuse or refill this container Offer for recycling if available Clean container 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 ¼ full with water and recap Shake for 10 seconds Pour rinsate into application equipment or a mix tank

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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 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

**Nonrefillable Container (greater than five gallons)** Nonrefillable container Do not reuse or refill this container Offer for recycling if available Clean container promptly after emptying Triple rinse as follows Empty the remaining contents into application equipment or a mix tank Fill the container ¼ full with water Replace and tighten closures Tip container on its side and roll it back and forth ensuring at least one complete revolution for 30 seconds Stand the container on its end and tip it back and forth several times Turn the container over onto its other end and tip it back and forth several times Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal Repeat this procedure two more times Then offer for recycling or reconditioning 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

**Refillable Container** Refillable container Refill this container with oryzalin 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 this container into application equipment or mix tank Fill the container about 10 percent full with water Agitate vigorously or recirculate water with the pump for 2 minutes Pour or pump rinsate into application equipment or rinsate collection system Repeat this rinsing procedure two more times

### LIMITATION OF WARRANTY AND LIABILITY

Read the entire directions for use conditions of warranties and limitations of liability before using this product If terms are not acceptable return the unopened product container at once

By using this product user or buyer accepts the following **CONDITIONS DISCLAIMER OF WARRANTIES and LIMITATIONS OF LIABILITY**

**CONDITIONS** The directions for use of this product are believed to be adequate and must be followed carefully However it is impossible to eliminate all risks associated with the use of this product Crop injury ineffectiveness or other unintended consequences may result because of such factors as weather conditions presence of other materials or the manner of use or application all of which are beyond the control of Makhteshim Agan of North America Inc All such risks shall be assumed by the user or buyer

**DISCLAIMER OF WARRANTIES** To the extent consistent with applicable law Makhteshim Agan of North America Inc makes no other warranties express or implied of merchantability or of fitness for a particular purpose or otherwise that extend beyond the statements made on this label No agent of Makhteshim Agan of North America Inc is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein To the extent consistent with applicable law Makhteshim Agan of North America Inc disclaims any liability whatsoever for special incidental or consequential damages resulting from the use or handling of this product

**LIMITATIONS OF LIABILITY** To the extent consistent with applicable law the exclusive remedy of the user or buyer for any and all losses injuries or damages resulting from the use or handling of this product whether in contract warranty tort negligence strict liability or otherwise shall not exceed the purchase price paid or at Makhteshim Agan of North America Inc s election the replacement of product

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