

79676-13

8/25/2004

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U.S. ENVIRONMENTAL PROTECTION AGENCY  
Office of Pesticide Programs  
Registration Division (H7505C)  
401 "M" St., S.W.  
Washington, D.C. 20460

EPA Reg.  
Number:  
79676-13 ✓

Date of Issuance:  
AUG 25 2004

Term of Issuance:  
Conditional

Name of Pesticide Product:  
Oryzalin Pro 4  
Herbicide

## NOTICE OF PESTICIDE:

☒ Registration  
Reregistration

(under FIFRA, as amended)

Name and Address of Registrant (include ZIP Code):

Gro-Pro, LLC  
2214 Hwy 44 West  
Inverness, FL 34453

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

1. Add the phrase "EPA Registration No. 79676-13" to the label before you release the product for shipment.

COMMENTS CONTINUED ON PAGE 2 OF THIS NOTICE OF REGISTRATION

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

Enclosure

Joanne I. Miller  
Product Manager (23)  
Herbicide Branch  
Registration Division (7505C)

Signature of Approving Official:

/s/

Date:

AUG 25 2004

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EPA Reg. No. 79676-13  
Comments Continued:

2. Either delete the front panel claim "Specialty Herbicide" or add a statement on the front panel as to why this product is a "Specialty Herbicide".
  3. The use of the descriptor "selective" to describe the control of weeds must be followed by a definition of the word as it is used in context with the following labeling, or alternatively delete this descriptor.
  4. Submit one (1) copy of the final printed labeling before you release this product for shipment.
  5. Submit and/or cite all data required for the registration of this product when the Agency requires all registrants of similar products to submit data; and submit acceptable responses required for reregistration of this product under FIFRA, section 4.  
A stamped copy of the label is enclosed for your records.
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Enclosure

# Oryzalin Pro 4 Herbicide

## Specialty Herbicide

A selective preemergence surface-applied herbicide for control of annual grasses and many broadleaf weeds in:

- Landscape Ornamentals
- Container Grown Ornamentals
- Field Grown Ornamentals
- Drainage Areas Under Shadehouse Benches
- Ornamental Bulbs
- Ground Covers/Perennials
- Christmas Tree Plantations
- Non-bearing fruit and nut trees and non-bearing vineyards
- Noncropland and Industrial Sites
- Established Warm Season Turf (including Bahiagrass, Bermudagrass, Buffalograss, Centipedegrass, St. Augustinegrass and Zoysiagrass)
- Tall Fescue (warm season areas)

### ACTIVE INGREDIENT:

Oryzalin: 3,5-dinitro-*N,N'*-dipropylsulfanilamide ..... 40.4%

**OTHER INGREDIENTS:** ..... 59.6%

**TOTAL:** ..... 100.0%

Contains 4.0 pounds of active ingredient per gallon.

## KEEP OUT OF REACH OF CHILDREN

## CAUTION PRECAUCION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.  
(If you do not understand the label, find someone to explain it to you in detail.)

FIRST AID	
<b>If 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>
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 1-800-424-9300 for emergency medical treatment information.	

See inside label booklet for additional PRECAUTIONARY STATEMENTS

EPA Reg. No. 79676-

ACCEPTED  
with COMMENTS  
in EPA Order 2004  
AUG 25 2004

EPA Est. No.

Manufactured for:  
Gro-Pro, LLC  
2214 Hwy 44 West  
Inverness, FL 34453

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

79676-13

Contains the same active  
ingredient as Surflan® by  
United Phosphorus, Inc.

Net Contents:

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

Causes eye irritation. Prolonged or frequently repeated contact may cause allergic reactions in some individuals. Avoid contact with eyes or clothing.

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**

**Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- 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, use detergent and hot water. Keep and wash PPE separately from other laundry.

**ENGINEERING CONTROLS STATEMENTS**

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 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.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

**Shake Well Before Using.**

**Notice:** Read the entire label. Use only according to label directions. **Before buying or using this product, read the "Condition of Sale and Limitation of Warranty and Liability" section of this label. If terms are unacceptable, return at once unopened.**

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**DIRECTIONS FOR USE**

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It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read all Directions for Use carefully before applying.

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 ½ to 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

### NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

**Entry Restrictions for Non-WPS Uses:** Keep all persons, children and pets out of treated area until sprays have dried.

### GENERAL INFORMATION

Oryzalin Pro 4 Herbicide is a preemergence surface-applied product for the control of many annual grasses and broadleaf weeds in ornamental plantings, bulbs, ground covers/perennials, established warm-season turfgrass, Christmas tree plantations, non-bearing trees and vines, and noncropland and industrial sites.

Oryzalin Pro 4 Herbicide is orange in color and may cause temporary discoloration of sprayed surfaces. If this discoloration is undesirable, it may be altered by using a commercially available colorant such as Blazon or removed by spraying surface with water or washing with an industrial cleaner immediately after application. Oryzalin Pro 4 Herbicide may also be applied with mulch colorants such as Mulch Magic or Nu-Mulch.

#### Treatment of Plant Species Not Listed on the Oryzalin Pro 4 Herbicide Label

Users who wish to use Oryzalin Pro 4 Herbicide on plant species not recommended on this label may determine the suitability for use by treating a small number of such plants at a recommended rate. Prior to treatment of larger areas, the treated plants should be observed for any sign of herbicidal injury during 30-60 days of normal growing conditions to determine if the treatment is non-injurious to the target plant species. The user assumes responsibility for any plant damage or other liability resulting from the use of Oryzalin Pro 4 Herbicide on plant species not recommended on this label.

**Aerial Application:** Do aerially apply this product.

**Chemigation:** Do not apply this product through any type of irrigation system.

Do not graze or feed forage from treated areas to livestock.

**Precaution:** Avoid spray drift to non-target areas when applying Oryzalin Pro 4 Herbicide. Spray drift may result in reduced emergence of non-target plants adjacent to the treated area. Poor weed control may result if directions are not followed. Over-application may result in crop injury or excessive soil residue.

## APPLICATION

### SOIL PREPARATION

Oryzalin Pro 4 Herbicide controls weeds growing from seed. Oryzalin Pro 4 Herbicide will not control emerged weeds. Oryzalin Pro 4 Herbicide does not control established weeds, weeds growing from stolens, rhizomes, or root pieces. Therefore, areas to be treated should be free of emerged weeds. Weed residues, prunings, and trash should be thoroughly mixed into the soil or removed prior to treatment. In field applications, the soil should be in good tilth and free of clods at the time of application.

**Ground Application:** Apply Oryzalin Pro 4 Herbicide as a directed spray to the soil surface or over the top of plants. Use only a properly calibrated, low-pressure, herbicide sprayer that will apply the spray uniformly. Use screens no finer than 50 mesh in nozzles and in-line strainers. Apply the appropriate rate of Oryzalin Pro 4 Herbicide, as outlined in the "Approved Uses" section of this label. In all cases, use sufficient water volume to obtain uniform coverage and deliver the desired rate of Oryzalin Pro 4 Herbicide to the treated area. The volume of water used is not critical as long as the desired rate of Oryzalin Pro 4 Herbicide is delivered uniformly across the area treated. When calibrating, determine the volume of water delivered by the sprayer to a given area (1,000 sq. ft, 1 acre, etc.). Then mix the desired rate of Oryzalin Pro 4 Herbicide in the amount of water required to cover the entire area to be treated. As the amount of water used (spray volume) decreases, the importance of accurate calibration and uniform application increases. Check the sprayer daily to ensure proper calibration and uniform application. Maintain continuous agitation from mixing through application. Avoid spray pattern skips and overlaps that may result in incomplete coverage or over-application.

**Hand-Held or Backpack Sprayer Application:** The amount of water used to apply Oryzalin Pro 4 Herbicide is not critical, but should be sufficient for uniform coverage of the target area. Calibrate by determining the volume of water required to treat 1,000 sq. ft. Use this calibration volume to determine the amount of water and Oryzalin Pro 4 Herbicide needed to treat the target area (see the following calibration example). **Note:** Sprayer calibration (volume of spray needed to treat 1,000 sq. ft.) will vary with each individual operator.

#### Steps in Calibration:

1. Mark an area of 1,000 sq. ft. (i.e., 20 by 50 feet, or 25 by 40 feet).
2. Place the sprayer on a level surface and add water noting the final level of water in the spray tank.
3. Spray the marked area with a sufficient volume of water to provide uniform coverage. Refill the sprayer to the same level as before measuring the amount of water added. The measured water added to the sprayer is the volume needed to cover 1,000 sq. ft.
4. Determine the application rate (fl. oz./1,000 sq. ft.) for Oryzalin Pro 4 Herbicide from the "Approved Uses" section of this label.
5. To each volume of water used, as measured in step 3, add the amount of Oryzalin Pro 4 Herbicide as determined in step 4.

**Example:** If the sprayer used 2 gallons of water to cover 1,000 sq. ft. and the desired Oryzalin Pro 4 Herbicide application rate is 3 fl. oz./1,000 sq. ft., then you would add 3 fl. oz. of Oryzalin Pro 4 Herbicide to every 2 gallons of water to be used.

### MIXING DIRECTIONS

#### Shake Well Before Using

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

### Oryzalin Pro 4 Herbicide – Alone

Make sure the spray tank is clean and use only clean water. Fill spray tank  $\frac{1}{2}$  -  $\frac{3}{4}$  full. Start agitation and add the required amount of Oryzalin Pro 4 Herbicide. Continue agitation and finish filling the spray tank. Maintain continuous agitation until application is completed.

### Oryzalin Pro 4 Herbicide – Tank Mix Combinations

Prior to tank mixing, read and carefully follow all label instructions and precautions for each product added to the tank mixture. Vigorous, continuous agitation is required for all tank mixes of Oryzalin Pro 4 Herbicide. Sparger pipe agitators generally provide the best agitation in spray tanks.

**Mixing Order:** Fill the tank  $\frac{3}{4}$  full with clean water. Start agitation and add different formulation types in the order indicated below, allowing time for complete mixing and dispersion after addition of each product. Allow extra mixing and dispersion time for dry flowable products.

Add different formulation types in the following order: dry flowables (DF); wettable powders (WP); Oryzalin Pro 4 Herbicide and other aqueous suspensions (AS); flowables (F); and liquids (L); solutions (S); and emulsifiable concentrates (EC).

Continue agitation and finish filling the spray tank with clean water. Maintain agitation until application is completed. If spraying and agitation must be stopped before the spray tank is empty, the materials may settle to the bottom. Settled materials must be completely resuspended before spraying is continued. A sparger agitator is particularly useful for this purpose.

**Premixing:** When tank mixing, initial mixing and dispersion of certain dry flowable or wettable powder products may be improved by premixing with water (slurring). Adding the slurried material to the spray tank through a wetting screen of 20 or 35 mesh will help assure good initial dispersion.

### Equipment Cleaning

If a buildup of material occurs on the walls of the spray tank, it should be removed between fillings by washing with soap and water and rinsing thoroughly. Tanks, lines, screens, and nozzles should be cleaned thoroughly after each use.

### Activation and Cultivation

Oryzalin Pro 4 Herbicide remains stable on the soil surface up to 21 days following application. In the absence of timely rainfall, irrigation can be used to activate Oryzalin Pro 4 Herbicide. A minimum of  $\frac{1}{2}$  inch of rain or its equivalent in sprinkler irrigation is necessary to activate Oryzalin Pro 4 Herbicide. If weeds begin to emerge due to lack of rainfall or irrigation, shallow cultivate 1-2 inches deep to destroy existing weeds, or remove them by hand. Shallow cultivation to a depth of 1-2 inches will enhance herbicidal effectiveness. Erratic weed control may result if Oryzalin Pro 4 Herbicide is not activated by rainfall, irrigation, or cultivation within 21 days of application, or existing weeds have not been removed.

### WEEDS CONTROLLED BY ORYZALIN PRO 4 HERBICIDE

#### Annual Grasses:

Common Name	Scientific Name	Common Name	Scientific Name
barley, little	<i>Hordeum pusillum</i>	Johnsongrass (seedling only)	<i>Sorghum halepense</i>
barnyardgrass (watergrass)	<i>Echinochloa crus-galli</i>	junclerice	<i>Echinochloa colonum</i>
bluegrass, annual	<i>Poa annua</i>	lovegrass, Mexican	<i>Eragrostis mexicana</i>
crabgrass, large	<i>Digitaria sanguinalis</i>	lovegrass, orcutt	<i>Eragrostis orcuttiana</i>
crabgrass, smooth	<i>Digitaria ischaemum</i>	oat, wild	<i>Avena fatua</i>
crowfootgrass	<i>Dactyloctenium aegyptium</i>	panicum, browntop	<i>Panicum fasciculatum</i>
cupgrass, southwestern	<i>Eriochloa gracilis</i>	panicum, fall (spreading panicgrass)	<i>Panicum dichotomiflorum</i>

**Annual Grasses:**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Common Name</b>	<b>Scientific Name</b>
foxtail, bristlegass	<i>Setaria magna</i>	panicum, Texas (buffalograss) (Coloradograss)	<i>Panicum texanum</i>
foxtail, giant	<i>Setaria faberi</i>	ryegrass, Italian	<i>Cenchrus incertus</i>
foxtail, green (pigeongrass)	<i>Setaria viridis</i>	signalgrass (Brachiaria)	<i>Brachiaria</i> spp.
foxtail, robust	<i>Setaria robusta</i>	sprangletop, red	<i>Leptochloa filiformis</i>
foxtail, yellow	<i>Setaria glauca</i>	witchgrass	<i>Panicum capillare</i>
goosegrass (silver crabgrass)	<i>Eleusine indica</i>		

**Broadleaf Weeds:**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Common Name</b>	<b>Scientific Name</b>
bittercress	<i>Cardamine oligosperma</i>	pigweed, redroot	<i>Amaranthus retroflexus</i>
carpetweed	<i>Mollugo verticillata</i>	pigweed, spring	<i>Amaranthus hybridus</i>
chickweed, common	<i>Stellaria media</i>	pigweed, tumble	<i>Amaranthus albus</i>
fiddleneck, coast	<i>Amsinckia intermedia</i>	puncturevine	<i>Tribulus terrestris</i>
filaree, redstem	<i>Erodium cicutarium</i>	purslane, common	<i>Portulaca oleracea</i>
filaree, whitestem	<i>Erodium moschatum</i>	pusley, Florida (Florida purslane) (Mexican clover) (pusley)	<i>Richardia scabra</i>
groundsel, common	<i>Senecio vulgaris</i>	rocket, London	<i>Sisymbrium irio</i>
henbit	<i>Lamium amplexicaule</i>	rockpurslane, desert	<i>Calandrinia ciliate</i>
knotweed, prostrate	<i>Polygonum aviculare</i>	shepherdspurse	<i>Capsella bursa-pastoris</i>
lambsquarters	<i>Chenopodium album</i>	spurge, prostrate	<i>Euphorbia humistrata</i>
pigweed, prostrate	<i>Amaranthus blitoides</i>	woodsorrel, yellow	<i>Oxalis stricta</i>

**WEEDS SUPPRESSED BY ORYZALIN PRO 4 HERBICIDE**

Control of the following weeds may be erratic, ranging from poor to excellent, depending upon soil temperature, time of germination, depth of seed in the soil, and amount and timing of soil moisture:

<b>Common Name</b>	<b>Scientific Name</b>	<b>Common Name</b>	<b>Scientific Name</b>
horseweed	<i>Conyza canadensis</i>	nightshade, black	<i>Solanum nigrum</i>
ladysthumb	<i>Polygonum persicaria</i>	ragweed, common	<i>Ambrosia artemisiifolia</i>
lettuce, prickly	<i>Lactuca serriola</i>	smartweed	<i>Polygonum pensylvanicum</i>
mallow, common	<i>Malva neglecta</i>	sowthistle, annual	<i>Sonchus oleraceus</i>
milkweed, climbing	<i>Sarcostemma cynanchoides</i>	spurge, spotted	<i>Euphorbia maculate</i>
morningglory	<i>Ipomoea</i> spp.	teaweed (prickly sida)	<i>Sida spinosa</i>
mustard, black	<i>Brassica nigra</i>	velvetleaf	<i>Abutilon theophrasti</i>
mustard, wild	<i>Brassica kaber</i>	wheat, volunteer	<i>Triticum</i> spp.

**CROP-SPECIFIC USE DIRECTIONS****ORNAMENTAL PLANTINGS**

Oryzalin Pro 4 Herbicide is recommended for use on certain landscape container-and field-grown established ornamental plants including: trees, shrubs, ground covers/perennials, flowers, non-bearing



fruit and nut trees, non-bearing vineyards; and in the production of ornamental bulbs (See "Ornamental Bulbs" section for specific use directions).

#### Broadcast Application Rates

Labeled Use Site	Length of Control	Oryzalin Pro 4 Herbicide		Minimum Time Between Applications (months)	Total Amount Allowed Per Year (qts./acre)
		(qts./acre)	(fl. oz./1,000 sq. ft.)		
Landscape Ornamentals	2-4 months	2	1.5	2	8
	3-6 months	3	2.2	4	12
	4-8 months	4	3	4	12
Field-grown and container-grown ornamentals	2-4 months	2	1.5	3	8
	3-6 months	3	2.2	3	9
	4-8 months	4	3	3	12

#### Tank Mix Combinations

Tank mix combinations of Oryzalin Pro 4 Herbicide plus Roundup®, and many other labeled herbicides may be used to control undesirable vegetation in ornamental areas. Oryzalin Pro 4 Herbicide may also be tank mixed with Gallery™ herbicide and applied preemergence to broaden the spectrum of broadleaf weed control in ornamental areas. Applied as directed, these tank mixes of Oryzalin Pro 4 Herbicide will provide control of susceptible weed species listed on the respective labels. Refer to the tank mix product labels for specific use directions, precautions, and limitations before use.

**Oryzalin Pro 4 Herbicide Plus Roundup®:** Tank mix combinations of Oryzalin Pro 4 Herbicide plus Roundup® are recommended to control existing undesirable vegetation. Applied as directed, Oryzalin Pro 4 Herbicide 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 Pro 4 Herbicide. Refer to the label for Roundup® for specific use directions, precautions, and limitation before use.

**Precautions:** Do not apply sprays containing Roundup® over the top of ornamental plants. Extreme care must be exercised to prevent sprays containing Roundup® from coming in contact with foliage and stems of turfgrasses, trees, shrubs, or other desirable vegetation since severe damage or death may result. If spraying with Roundup® in areas adjacent to desirable plants, use a shield to prevent spray from contacting foliage and stems of desirable plants.

#### Special Use Precautions:

Apply only to established plants that have been transplanted into their 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.

Rooted liners should be removed from their original growing containers and placed in new containers at least two weeks prior to treatment or injury may occur.

To avoid possible injury, do not apply Oryzalin Pro 4 Herbicide to:

- Nursery, forest, or Christmas trees: seedling beds, cutting beds, or transplant beds.
- Unrooted liners or cuttings that have been planted in pots for the first time.
- Pots less than 4 inches wide.
- Ground covers until they are established and well rooted.
- Ornamental plantings where there is likelihood of runoff onto lawn areas.
- Areas containing dichondra or cool season turfgrass species.

On container grown ornamentals where weed seed germination continues for extended periods of time, do not make repeat applications of Oryzalin Pro 4 Herbicide for at least 90 days or crop injury may occur.

Applications of Oryzalin Pro 4 Herbicide over the top of plants with newly forming buds may cause injury. In this situation a directed spray is recommended.

For soils treated with Oryzalin Pro 4 Herbicide during the previous season, plant only the ornamental species listed on this label or injury may occur.

**Ice Plant:** When establishing unrooted ice plant on coarse-textured soils in landscape plantings, do not exceed the 2-quart per acre rate of Oryzalin Pro 4 Herbicide or crop injury may occur.

**Note: Injury on the following plant species has been observed following applications of Oryzalin Pro 4 Herbicide and use is not recommended:**

*Deutzia gracillis* (slender deutzia)

*Pseudotsuga menziesii* (Douglas fir)

*Thuja occidentalis* 'Techny' (Techny arborvitae)

*Tsuga canadensis* (eastern hemlock)

*Begonia* spp. (begonia)

*Coleus hybridus* (coleus)

**Oryzalin Pro 4 Herbicide May be Used on the Following Established Plant Species:**  
(Note: Limitations on recommended treatment methods).

## TREES

Trees			Trees (continued)		
		Recommended Treatment Method			Recommended Treatment Method
		F = Field Grown C = Container Grown			F = Field Grown C = Container Grown
Scientific Name	Common Name		Scientific Name	Common Name	
<i>Abies balsamea</i>	Fir, balsam	F	<i>Heteromeles arbutiflora</i>	Toyon	F
<i>Abies concolor</i>	Fir, white	F	<i>Juniperus virginiana</i>	Redcedar, Eastern	F
<i>Abies fraseri</i>	Fir, fraser	F	<i>Koeleruteria paniculata</i>	Goldenrain tree	F
<i>Abies grandis</i>	Fir, grand	F	<i>Liquidambar styraciflua</i>	Sweetgum, American	C,F
<i>Abies veitchi</i>	Fir, Vietch	F	<i>Magnolia</i> spp.	Magnolia	F
<i>Abies lasiocarpa</i>	Fir, alpine	F	<i>Malus</i> spp.	Crabapple	F
<i>Abutilon hybridum</i>	Albus-flowering maple	F	<i>Morus alba</i>	White mulberry	F
	Luteus-flowering maple	F	<i>Picea abies</i>	Pendula-weeping Norway spruce	F
	Roseus-flowering maple	F		Repens-spreading Norway spruce	F
	Tangerine-flowering maple	F		Spruce, Norway	F
	Vesuvius red-flowering maple	F	<i>Picea engelmanni</i>	Spruce, Englemann	F
<i>Acer ginnala</i>	Flame maple	F	<i>Picea glauca</i>	Spruce, white	F
<i>Acer rubrum</i>	Red sunset maple	F		Conica-dwarf Alberta spruce	F
<i>Acer saccharinum</i>	Silver maple	F	<i>Picea glauca conica</i>	Dwarf Alberta spruce	F
<i>Acer</i> spp.	Maple	F	<i>Picea mariana</i>	Spruce, black	F
<i>Alsophila australis</i>	Australian tree fern	C,F	<i>Picea pungens</i>	Glauca-Colorado blue	F

Trees			Trees (continued)		
		Recommended Treatment Method			Recommended Treatment Method
		F = Field Grown C = Container Grown			F = Field Grown C = Container Grown
Scientific Name	Common Name		Scientific Name	Common Name	
<i>Areacastrum romanzoffianum</i>	Queen palm	F		spruce	
<i>Betula nigra</i>	Birch, river	F		Hoopsii-Hoop's blue spruce	F
<i>Betula papyrifera</i>	Paper birch	F		Koster-Koster blue spruce	F
<i>Betula pendula</i>	Birch, white	F	<i>Pinus aristata</i>	Spruce, Colorado	C,F
<i>Bucida buceras</i>	Black olive	F	<i>Pinus canariensis</i>	Bristlecone pine	F
<i>Carya</i> spp.	Pecan, ornamental	C,F	<i>Pinus contorta</i>	Canary Island pine	F
<i>Cedrus, atlantica</i>	Atlas cedar	C,F	<i>Pinus eldarica</i>	Shore pine, beach pine	F
<i>Cedrus deodara</i>	Deodar cedar	C,F	<i>Pinus halepensis</i>	Eldarica pine	F
<i>Ceratonia siliqua</i>	Carob	F	<i>Pinus radiata</i>	Aleppo pine	C,F
<i>Cercidium floridum</i>	Palo Verde, blue	F	<i>Pinus</i> spp.	Monterey pine	F
<i>Cercis canadensis</i>	Redbud	C,F	<i>Pinus strobus</i>	Pine	C,F
<i>Chamaecyparis lawsoniana</i>	Falsecypress, Lawson	F	<i>Pinus sylvestris</i>	Eastern white pine	F
<i>Chamaecyparis obtusa</i>	Filicoides-fernspray cypress	F		Scotch pine	F
	Gracilis-slender Hinoki cypress	F	<i>Pinus thunbergiana</i>	Japanese black pine	F
<i>Chamaecyparis pisifera</i>	Sawara-false cypress	F	<i>Platanus occidentalis</i>	American sycamore	F
	Squarrosa-moss cypress	F	<i>Platanus racemosa</i>	California sycamore	F
<i>Chamaedorea cataractarum</i>	Cat Palm	F	<i>Podocarpus</i> spp.	Podocarpus	F
<i>Chamaedorea costaricana</i>	Palm	F	<i>Populus deltoides</i>	Cottonwood	F
<i>Chamaedorea elegans</i>	Parlor palm	F		Cottonwood (grown for pulp)	F
<i>Citrus</i> spp.	Citrus, ornamental	C,F	<i>Prunus caroliniana</i>	Laurelcherry, Carolina	F
<i>Cornus florida</i>	Dogwood, flowering	F	<i>Prunus glandulosa</i>	Dwarf flowering almond	C,F
<i>Cryptomeria japonica</i>	Cryptomeria, Japanese	C,F	<i>Prunus laurocerasus</i>	Laurelcherry, English	F
<i>Cupaniopsis anacardioides</i>	Carrot wood	F	<i>Prunus mahaleb</i>	Cherry, Mahaleb	F
<i>Cupressus arizonica (glabra)</i>	Cypress, Arizona	C,F	<i>Prunus yedoensis</i>	Yoshino flowering cherry	F
<i>Cupressus glabra</i>	Arizona cypress	C,F	<i>Pyrus communis</i>	Pear	F
<i>Cupressocyparis leylandii</i>	Leyland cypress	C,F	<i>Quercus palustris</i>	Pin oak	F
<i>Cupressus sempervirens</i>	Cypress, Italian	C,F	<i>Quercus phellos</i>	Willow oak	F
<i>Dicksonia antarctica</i>	Tasmanian tree fern	C,F	<i>Quercus rubra</i>	Red oak	C,F
<i>Elaeagnus angustifolia</i>	Russian olive	C,F	<i>Quercus</i> spp.	Oak	C,F
<i>Eucalyptus camaldulensis</i>	Red gum eucalyptus	F	<i>Salix babylonica</i>	Babylon weeping willow	F
<i>Eucalyptus cinerea</i>	Eucalyptus, mealy	F		Corkscrew willow	F
			<i>Schinus molle</i>	California pepper tree	F

Trees			Trees (continued)		
		Recommended Treatment Method			Recommended Treatment Method
		F = Field Grown C = Container Grown			F = Field Grown C = Container Grown
Scientific Name	Common Name		Scientific Name	Common Name	
	Silver dollar eucalyptus	F	<i>Sequoia sempervirens</i>	Redwood, coast	F
<i>Eucalyptus nicholii</i>	Eucalyptus, narrow-leaved	F	<i>Sequoiadendron giganteum</i>	Giant sequoia	F
<i>Eucalyptus sideroxylon</i>	Eucalyptus, red ironbark	F	<i>Swietenia mahogany</i>	Mahogany	F
<i>Ficus benjamina</i>	Ficus	F	<i>Tabebuia caraiba</i>	Yellow tab	F
<i>Fraxinus</i> spp.	Ash	F	<i>Tilia cordata</i>	Linden, little leaf	C,F
<i>Ginkgo biloba</i>	Ginkgo (Maidenhair tree)	C,F	<i>Ulmus parvifolia</i>	Chinese elm	F
<i>Gleditsia triacanthos</i>	Honey locust	F	<i>Umbellularia californica</i>	California laurel	F
			<i>Washingtonia robusta</i>	Mexican fan palm	F

## SHRUBS

Shrubs			Shrubs (continued)		
		Recommended Treatment Method			Recommended Treatment Method
		F = Field Grown C = Container Grown			F = Field Grown C = Container Grown
Scientific Name	Common Name		Scientific Name	Common Name	
<i>Abelia grandiflora</i>	Glossy abelia	F	<i>Lonicera periclymenum</i>	Flowering woodbine	F
<i>Acacia redolens</i>	Acacia, prostrate	F		Serotina woodbine	F
<i>Agave americana</i>	Century plant	F	<i>Lonicera sempervirens</i>	Trumpet honeysuckle	F
<i>Agave macroculmis</i>	Agave	F	<i>Lorpetalum chinese</i>	(No common name)	C,F
<i>Anisodonteia hypomandarum</i>	Cape mallow	C,F	<i>Mahonia aquifolium</i>	Oregon grape	F
<i>Arctostaphylos stanfordiana</i>	Manzanita, Stanford	F	<i>Myoporum parvifolium</i>	Myoporum, prostrate	F
<i>Astilbe chinensis</i>	Astilbe/false spirea	C,F	<i>Myrtus communis</i>	Myrtle, true	C,F
<i>Baccharis pilularis</i>	Coyotebush	F	<i>Nandina domestica</i>	Compacta-dwarf heavenly bamboo	C,F
				Harbour dwarf-heavenly bamboo	C,F
<i>Berberis thunbergii</i>	Aurea-golden Japanese barberry	C,F		Heavenly bamboo (Nandina)	C,F
	Crimson pygmy barberry	C,F		Nana compacta-heavenly bamboo	C,F
	Atropurea-redleaf Japanese barberry	C,F		Nana purpurea-heavenly bamboo	C,F
	Barberry, Japanese	C,F		Woods dwarf-heavenly bamboo	C,F
<i>Bougainvillea</i> spp.	Barbara Karst	F		Hardy red oleander	C,F
	California gold	F	<i>Nerium oleander</i>	Oleander	C,F
	Scarlet O'Hara	F		Ruby lace oleander	C,F
	Texas dawn	F		Osmanthus, holly-leaf	F
<i>Buxus microphylla</i>	Littleleaf boxwood	F	<i>Osmanthus heterophyllus</i>		
<i>Buxus microphylla japonica</i>	Boxwood, Japanese	C,F	<i>Pachysandra terminalis</i>	Japanese spurge	C,F

## Shrubs

Recommended Treatment  
Method  
F = Field Grown  
C = Container Grown

Scientific Name	Common Name	
<i>Buxus sempervirens</i>	Boxwood, common	C,F
<i>Callistemon citrinus</i>	Bottlebrush, lemon	C,F
<i>Cassia artemisioides</i>	Cassia, feathery	F
<i>Ceanothus americanus</i>	Jerseytea, redroot	C,F
<i>Ceanothus</i> spp.	Wild lilac	C,F
<i>Chaenomeles japonica</i>	Flowering quince	C,F
<i>Chamaecyparis obtusa</i>	Kosteri cypress	F
	Nana-dwarf Hinoki cypress	F
	Torulosa cypress	F
<i>Chamaecyparis pisifera</i>	Squarrosa Minima cypress	F
<i>Chamaecyparis pisifera</i> spp.	Filifera-thread cypress	F
<i>Chrysalidocarpus lutescens</i>	Areca palm	F
<i>Cleyera japonica</i>	Cleyera, Japanese	C,F
<i>Coleonema pulchrum</i>	Pink breath of heaven	C,F
<i>Cornus alba</i>	Sibirica-Siberian dogwood	F
<i>Cornus kousa</i>	Dogwood, kousa	C,F
<i>Cornus stolonifera</i>	Flaviramea-yellowtwig dogwood	F
<i>Cotoneaster adpressus</i>	Praecox-early cotoneaster	F
<i>Cotoneaster apiculatus</i>	Cotoneaster, cranberry	C,F
<i>Cotoneaster buxifolius</i>	Cotoneaster, brightbead	F
<i>Cotoneaster congestus</i>	Cotoneaster, Pyrenees	F
<i>Cotoneaster dammeri</i>	Cotoneaster, bearberry	C,F
<i>Cotoneaster himalayan</i>	Himalayan cotoneaster	F
<i>Cotoneaster horizontalis</i>	Cotoneaster, rock	C,F
<i>Cotoneaster lacteus</i>	Cotoneaster, parney	C,F
<i>Cotoneaster microphyllus</i>	Cotoneaster, rockspray	F
<i>Cotoneaster salicifolia</i>	Willowleaf cotoneaster	C,F
<i>Cytisus praecox</i>	Hollandia-warminster broom	F

## Shrubs (continued)

Recommended Treatment  
Method  
F = Field Grown  
C = Container Grown

Scientific Name	Common Name	
<i>Philadelphus</i> spp.	Mockorange	C,F
<i>Phoenix roeloenii</i>	Pigmy date palm	F
<i>Photinia fraseri</i>	Fraser's photinia	C,F
	Photinia	C,F
<i>Pieris japonica</i>	Lily-of-the-valley	F
	Snowdrift lily-of-the-valley	F
	Temple bells lily-of-the-valley	F
	Valley rose lily-of-the-valley	F
	Andromeda	C,F
<i>Pittosporum</i> spp.	Pittosporum	C,F
<i>Pittosporum tobira</i>	Green pittosporum	F
	Japanese pittosporum	F
	Tobira	F
	Wheeler's dwarf pittosporum	F
<i>Platycladus orientalis</i>	Arborvitae, Oriental	C,F
<i>Plumbago ariculata</i>	Blue cape plumbago	F
<i>Podocarpus macrophyllus</i>	Yewpine	C,F
<i>Potentilla fragiformis</i>	Cinquefoil	F
<i>Potentilla fruticosa</i>	Cinquefoil	C,F
<i>Protea neriifolia</i>	Protea	F
<i>Pyracantha coccinea</i>	Firethorn, scarlet	C,F
<i>Pyracantha fortuneana</i>	Lolendei Monrovia pyracantha	C,F
	Monon pyracantha	C,F
	Red elf hybrid pyracantha	C,F
	Rutgers hybrid pyracantha	C,F
	Santa Cruz pyracantha	C,F
	Victory pyracantha	C,F
<i>Pyracantha skoidzumi</i>	Firethorn, formosa	C,F

Shrubs			Shrubs (continued)		
		Recommended Treatment Method			Recommended Treatment Method
		F = Field Grown C = Container Grown			F = Field Grown C = Container Grown
Scientific Name	Common Name		Scientific Name	Common Name	
<i>Cytisus scoparius</i>	Lena-Scotch broom	F	<i>Pyracantha, fortuneana</i>	Firethorn	C,F
<i>Dasyllirion wheeleri</i>	Sotol, desert spoon	F	<i>Rhaphiolepis indica</i>	Enchantress-Moness rhaphiolepis	F
<i>Deutzia crenata</i>	Nakiana-dwarf deutzia	F		Rhaphiolepis (India hawthorn)	C,F
<i>Dodonaea viscosa</i>	Hopseedbush, clammy	F		Springtime-Monme rhaphiolepis	F
	Hopseed bush	F	<i>Rhaphiolepis ovata</i>	Roundleaf rhaphiolepis	F
<i>Escallonia exoniensis</i>	Escallonia	C,F	<i>Rhipsalidopsis gaertneri</i>	Eastercactus	C,F
<i>Euonymus alata</i>	Euonymus, winged	F	<i>Rhododendron calendulaceum</i>	Flame azalea	F
<i>Euonymus fortunei</i>	Canadale gold euonymus	C,F	<i>Rhododendron campylocarpum</i>	Butterfly rhododendron	F
	Emerald'n gold euonymus	C,F	<i>Rhododendron carolinianum x dauricum</i>	PJM rhododendron	F
	Euonymus, stringybark	C,F	<i>Rhododendron catawbiense</i>	Catawba album rhododendron	C,F
	Wintercreeper	C,F		Catawba rhododendron	C,F
<i>Euonymus japonica</i>	Euonymus, evergreen	C,F		Lord Roberts rhododendron	C,F
	Silver king euonymus	F		Rocket rhododendron	C,F
<i>Euonymus kiatschovica</i>	Spreading euonymus	F	<i>Rhododendron forrestii x griersonianum</i>	Elizabeth rhododendron	F
<i>Euonymus vegetus</i>	Bigleaf wintercreeper	C,F	<i>Rhododendron hybrid</i> spp.	American rhododendron	F
<i>Fatshedera lizei</i>	Fatshedera	C,F		English Roseum rhododendron	F
<i>Fatsia japonica</i>	Japanese aralia	C,F		Nova Zembla rhododendron	F
<i>Felicia amelloides</i>	Blue marguerite	C,F		Scintillation rhododendron	F
<i>Forsythia intermedia</i>	Forsythia, border	F	<i>Rhododendron impeditum</i>	Rhododendron	F
<i>Gardenia jasminoides</i>	Gardenia	C,F	<i>Rhododendron indica</i>	Formosa azalea	C,F
<i>Genista pilosa</i>	Woadwaxen	F		Waucabusa azalea	C,F
<i>Hibiscus rosa-sinesis</i>	Ross Estey-hibiscus	F	<i>Rhododendron kerume</i>	Coral bells azalea	C,F
	Hibiscus, Chinese	F		Hino crimson azalea	C,F
<i>Hibiscus syriacus</i>	Rose of Sharon, Red Bird	F		Hino pink azalea	C,F
	Rose of Sharon, Red Heart	F		Snow azalea	C,F
	Rose of Sharon, Woodbridge	F	<i>Rhododendron maximum</i>	Rhodie max (rosebay)	C,F
	Rose-of-Sharon	F	<i>Rhododendron</i>	Rhododendron	F

Shrubs			Shrubs (continued)		
		Recommended Treatment Method			Recommended Treatment Method
		F = Field Grown C = Container Grown			F = Field Grown C = Container Grown
Scientific Name	Common Name		Scientific Name	Common Name	
<i>Ilex aquifolium</i>	(Shrubalthea)		<i>mucronulatum</i>		
	Balkans holly	F	<i>Rhododendron satsumi</i>	Gumpo pink azalea	F
	Gold coast holly	F		Higasa azalea	F
<i>Ilex aquipernyi</i>	Holly, English	F	<i>Rhododendron</i> spp.	Azalea	C,F
	San Jose holly	C,F		Rhododendron	C,F
<i>Ilex cornuta</i>	Dwarf Burford holly	C,F	<i>Rhododendron</i> spp.	Carror azalea	C,F
<i>Ilex crenata</i>			Hybrids		
	Holly, Chinese	C,F		Girard Roberta azalea	F
	Compacta-dwarf Japanese holly	C,F		Golden flare exbury azalea	F
	Convexa holly	C,F	<i>Rhus lancea</i>	Sumac, African	C,F
<i>Ilex glabra</i>	Helleri-Heller's Japanese holly	C,F	<i>Rosa rugosa</i>	Ramanas rose	F
	Holly, Japanese	C,F	<i>Rosmarinus officinalis</i>	Rosemary	F
	Nordica-inkberry holly	F	<i>Senecio cineraria</i>	Dusty miller	C,F
<i>Ilex meserveae</i>	Blue boy holly	F	<i>Spiraea vanhouttei</i>	Bridal wreath	F
	Blue girl holly	F	<i>Syringa vulgaris</i>	Lilac, common	C,F
<i>Ilex vomitoria</i>	Ebony magic holly	F	<i>Syzgium paniculata</i>	Brush cherry	C,F
	Nana-dwarf yaupon holly	C,F	<i>Taxus cuspidate</i>	Yew, Japanese	F
	Pendula-weeping yaupon holly	C,F	<i>Taxus media</i>	Yew	F
	Yaupon holly	C,F	<i>Thuja occidentalis</i>	Arborvitae, American	C,F
<i>Juniperus chinensis</i>	Media-old gold juniper	C,F		Emerald arborvitae	F
<i>Juniperus conferta</i>	Emerald sea shore juniper	F		Globosa-globe arborvitae	F
<i>Juniperus horizontalis</i>	Huntington blue juniper	C,F		Little giant-dwarf arborvitae	F
	Wiltonii-blue carpet juniper	C,F		Nigra-dark American arborvitae	F
<i>Juniperus procumbens</i>	Nana-dwarf Japanese garden juniper	C,F		Pyramidalis arborvitae	F
<i>Juniperus prostrata</i>	Prostrata juniper	C,F		Rheingold arborvitae	F
<i>Juniperus sabina</i>	Broadmoor juniper	F		Woodwardii arborvitae	F
	Foemina-Hicks juniper	F	<i>Thuja orientalis</i>	Aureus nana-dwarf golden arborvitae	F
<i>Juniperus scopulorum</i>	Tamariscifolia-Tam juniper	F		Minima glauca-dwarf arborvitae	F
	Emerald green juniper	F	<i>Thuja plicata</i>	Red Cedar, Western	F
<i>Juniperus spp.</i>	Juniper	C,F	<i>Trachelospermum jasminoides</i>	Star jasmine, Chinese	F
<i>Juniperus squamata</i>	Blue juniper	F	<i>Veitchia merrilli</i>	Christmas palm	F
	Blue star juniper	F	<i>Viburnum carlesii</i>	Koreanspice viburnum	C,F
	Parsonii juniper	F	<i>Viburnum davidii</i>	David viburnum	F
<i>Justicia brandegeana</i>	Shrimp plant	C,F	<i>Viburnum japonicum</i>	Viburnum	F
<i>Justicia spicigera</i>	Honeysuckle, Mexican	F	<i>Viburnum judd</i> (V X Judii)	Viburnum	C,F
<i>Kalmia latifolia</i>	Laurel, mountain	F	<i>Viburnum opulus</i>	Common snowball	F

Shrubs			Shrubs (continued)		
		Recommended Treatment Method			Recommended Treatment Method
		F = Field Grown C = Container Grown			F = Field Grown C = Container Grown
Scientific Name	Common Name		Scientific Name	Common Name	
<i>Lagerstroemia indica</i>	Crape myrtle	C,F	<i>Viburnum plicatum tomentosum</i>	Doublefile viburnum	F
<i>Lavandula angustifolia</i>	English lavender	C,F	<i>Viburnum setigerum</i>	Tea viburnum	F
<i>Leucothoe axillaries</i>	Leucothoe, coast	F	<i>Viburnum suspensum</i>	Virburnum, Sandankwa	F
<i>Leucothoe fontanesiana</i>	Leucothoe, drooping	F	<i>Viburnum tinus</i>	Viburnum, Laurustinus	C,F
<i>Ligustrum amurense</i>	Privet, amur	C,F		Compactum-spring bouquet viburnum	F
<i>Ligustrum japonicum</i>	Privet, Japanese	C,F	<i>Viburnum tinus compactum</i>	Spring bouquet viburnum	F
	Yellow tip ligustrum	C,F	<i>Viburnum trilobum compactum</i>	Dwarf cranberry bush	F
<i>Ligustrum lucidum</i>	Privet, glossy	C,F	<i>Viburnum x pragense</i>	Viburnum	F
<i>Ligustrum ovalifolium</i>	California privet	F	<i>Weigela florida</i>	Bristol ruby weigela	F
<i>Ligustrum texanum</i>	Howardi privet	F		Java red weigela	F
	Wax leaf privet	F		Minuet weigela	F
<i>Ligustrum vicaryi</i>	Privet, golden	C,F		Weigela, oldfashioned	F
	Vicary golden privet	C,F	<i>Xylosma congestum</i>	Xylosma	F
<i>Livistona chinensis</i>	Chinese fountain palm	F	<i>Yucca elata</i>	Yucca, soap tree	C,F
<i>Lonicera fragrantissima</i>	Winter honeysuckle	F	<i>Yucca recurvifolia</i>	Yucca, pendulous	F

## GROUND COVERS/PERENNIALS

Ground Covers/Perennials			Ground Covers/Perennials (continued)		
		Recommended Treatment Method			Recommended Treatment Method
		F = Field Grown C = Container Grown			F = Field Grown C = Container Grown
Scientific Name	Common Name		Scientific Name	Common Name	
<i>Agapanthus africanus</i>	Lily-of-the-Nile	C,F	<i>Hosta</i> spp.	Lily, plantain	C,F
<i>Ajuga</i> spp.	Carpet bugle	F	<i>Heuchera micrantha</i>	Coral bells	C,F
<i>Arctotheca calendula</i>	Cape weed	F	<i>Hypericum</i> spp.	St. Johnswort	C,F
<i>Asparagus retrofractus</i>	(No common name)	C,F	<i>Iberis sempervirens</i>	Evergreen candytuft	C,F
<i>Asparagus varieegata</i>	Tree fern	C,F	<i>Lampranthus spectabilis</i>	Trailing iceplant	F
<i>Aster novae-angliae</i>	New England aster	C,F	<i>Leptospermum scaparium</i>	New Zealand teatree/Manuka	C,F
<i>Aster novi-belgii</i>	New York aster	C,F	<i>Limonium perezii</i>	Statice/Sea lavender	C,F



Ground  
Covers/Perennials

Recommended Treatment  
Method  
F = Field Grown  
C = Container Grown

Scientific Name	Common Name	
<i>Athyrium nipponicum</i>	Japanese painter fern	C,F
<i>Brassica oleracea</i>	Wild cabbage	C,F
<i>Callistephus chinensis</i>	China aster	C,F
<i>Campanula elatines</i>	Bellflower	C,F
<i>Carpobrotus edulis</i>	Ice plant, largeleaf (see label)	F
<i>Clytostoma callistegioides</i>	Trumpet vine, violet	C,F
<i>Cortaderia selloana</i>	Pampas grass	F
<i>Cuphea hyssopifolia</i>	False Mexican heather	C,F
<i>Delosperma alba</i>	White iceplant	F
<i>Dietes vegea</i>	Fortnight lily	C,F
<i>Digitalis mertonensis</i>	Foxglove	C,F
<i>Doronicum cordatum</i>	Leopard's bane	C,F
<i>Drosanthemum floribundum</i>	Trailing rosea iceplant	F
<i>Erianthus ravennae</i>	Hardy pampas grass	C,F
<i>Festuca ovina glauca</i>	Blue fescue	F
<i>Gaillardia grandiflora</i>	Blanket flower	C,F
<i>Gazania rigens leucolaena</i>	Gazania, trailing	C,F
<i>Gazania</i> spp.	Gazania	F
<i>Hedera canariensis</i>	Ivy, Algerian	F
<i>Hedera helix</i>	Ivy, English	F
<i>Heliotropium fragrans</i>	Common heliotrope	C,F
<i>Hemerocallis</i> spp.	Daylily	C,F
<i>Hosta lancifolia</i>	Albo-marginata hosta	C,F
<i>Hosta</i> spp.	Lily, plantain	C,F

Ground  
Covers/Perennials  
(continued)

Recommended Treatment  
Method  
F = Field Grown  
C = Container Grown

Scientific Name	Common Name	
<i>Liriope gigantea</i>	White lily turf	F
<i>Liriope muscari</i>	Lilac beauty lily turf	C,F
	Majestic lily turf	C,F
	Monroe white lily turf	C,F
	Silvery sunproof lily turf	C,F
	Variegated liriope lily turf	C,F
	Big blue lily turf	C,F
<i>Lobelia erinus</i>	Edging lobelia	C,F
<i>Lonicera japonica</i>	Honeysuckle, Japanese	F
<i>Mesembryanthemum crystallinum</i>	Ice plant (see label)	F
<i>Ophiopogon japonicus</i>	Mondo grass	F
<i>Osteospermum fruticosum</i>	Daisy, trailing African	F
<i>Pachysandra terminalis</i>	Japanese spurge	F
<i>Pennisetum setaceum</i>	Fountaingrass	C,F
<i>Polystichum polyblepharum</i>	Tassel fern	C,F
<i>Sedum brevifolium</i>	Stonecrop	C,F
<i>Sedum kamtschaticum</i>	Stonecrop	C,F
<i>Sedum spurium</i>	Stonecrop, tworow	C,F
<i>Tulbaghia violacea</i>	Society garlic	C,F
<i>Verbena rigida</i>	Veined verbena	C,F
<i>Veronica</i> spp.	Speedwell	C,F
<i>Vinca major</i>	Periwinkle, bigleaf	F
<i>Vinca minor</i>	Periwinkle, dwarf	F

## FLOWERS

## Flowers

Recommended Treatment  
Method  
F = Field Grown  
C = Container Grown

Scientific Name	Common Name	
<i>Achillea</i> spp.	Yarrow	C,F

## Flowers (continued)

Recommended Treatment  
Method  
F = Field Grown  
C = Container Grown

Scientific Name	Common Name	
<i>Impatiens wallerana</i>	Impatiens (Busy lizzie)	F

## Flowers

Recommended Treatment  
Method  
F = Field Grown  
C = Container Grown

Scientific Name	Common Name	
<i>Antirrhinum majus</i>	Snapdragon	F
<i>Caladium bicolor</i>	Caladium, fancy leafed	F
<i>Chrysanthemum</i> spp.	Chrysanthemum	C,F
<i>Cladium bicolor</i>	Fancy-leafed caladium	F
<i>Coreopsis lanceolata</i>	Coreopsis	F
<i>Coreopsis verticulata</i>	Threadleaf coreopsis	C,F
<i>Dianthus barbatus</i>	Sweet William	F
<i>Dianthus gratianopolitanus</i>	Cheddar pink	C,F
<i>Dicentra spectabilis</i>	Bleeding heart	C,F
<i>Dimorphotheca</i> spp.	Marigold, cape	F
<i>Echinacea purpurea</i>	Coneflower, purple	C,F
<i>Evolvulus nuttallianus</i>	Blue daze	C,F
<i>Geum quellyon</i>	Geum	F
<i>Gladiolus hortulanus</i>	Gladiolus	F
<i>Gypsophila paniculata</i>	Baby's breath	F

## Flowers (continued)

Recommended Treatment  
Method  
F = Field Grown  
C = Container Grown

Scientific Name	Common Name	
<i>Iris</i> spp.	Iris, bearded	F
<i>Liatris spicata</i>	Blazing star	C,F
<i>Pelargonium hortorum</i>	Geranium	F
<i>Petunia</i> spp.	Petunia	C,F
<i>Portulaca grandiflora</i>	Moss, rose	F
<i>Ranunculus asiaticus</i>	Ranunculus, Persian	F
<i>Rosa</i> spp.	Rose	F
<i>Rudbeckia fulgida</i>	Blackeyed susan	C,F
<i>Rudbeckia hirta</i>	Daisy, gloriosa (black-eyed Susan)	F
<i>Salvia</i> spp.	Salvia (Sage)	F
<i>Stokesia laevis</i>	Aster, stokes	F
<i>Strelitzia reginae</i>	Bird of paradise	F
<i>Tagetes</i> spp.	Marigold	F
<i>Viola wittrockiana</i>	Pansy	F
<i>Zinnia elegans</i>	Zinnia, common	F

## NON-BEARING\* TREES AND VINES

## Recommended Treatment Method

F = Field Grown  
C = Container Grown

almond	F
apple	F
apricot	F
avocado	F
blackberry	F
blueberry	F
boysenberry	F
cherry, sour	F
cherry, sweet	F
currant	F
dewberry	F
elderberry	F
fig	F
filbert	F
gooseberry	F
grape, American	F
grape, European	F
grapefruit	F

## Recommended Treatment Method

F = Field Grown  
C = Container Grown

kiwi	F
kumquat	C,F
lemon	F
loganberry	F
macadamia nut	F
nectarine	F
olive	F
orange	C,F
peach	F
pear	F
pecan	C,F
pistachio	F
plum	F
pomegranate	F
prune	F
raspberry	F
walnut, black	F
walnut, English	F

\*Non-bearing plants are defined as those that will not bear fruit for at least one year after treatment.

## ORNAMENTAL BULBS

Oryzalin Pro 4 Herbicide may be applied for control of susceptible annual weeds in ornamental bulbs, e.g., bulbous iris, daffodil (narcissus), hyacinth, and tulip. Apply Oryzalin Pro 4 Herbicide to the soil surface 2-4 weeks after planting but prior to the emergence of annual weeds. For fall planted bulbs, apply Oryzalin Pro 4 Herbicide again in late winter or early spring to weed-free soil surfaces.

### Broadcast Application Rates

Time of Application	Soil Texture	Oryzalin Pro 4 Herbicide		Minimum Time Between Applications (months)	Total Amount Allowed Per Year (qts./acre)
		(qts./acre)	(fl. oz./1,000 sq. ft.)		
Fall	Coarse	0.75	0.5	3	1.5
Fall	Medium and Fine	1.5	1.0	3	2.25
Feb. – March	All Soil Textures	0.75	0.5	3	2.25

### Special Use Precautions:

- Do not apply to tulip plants that have emerged to a height greater than  $\frac{3}{4}$  inch.
- Do not apply to gladioli corms prior to emergence or less than one (1) inch in diameter.

## SHADEHOUSE AREAS

Oryzalin Pro 4 Herbicide may be applied to drainage areas under benches in open shadehouse-type structures where the natural flow of air is unimpeded. Do not apply in enclosed greenhouses or in enclosed shadehouse-type structures. Do not apply within 3 weeks prior to enclosure of greenhouse or poly-type structures.

## CHRISTMAS TREE PLANTATIONS

### Oryzalin Pro 4 Herbicide Alone

Apply Oryzalin Pro 4 Herbicide 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.). Follow all instructions provided in the "General Information" section of this label.

### Broadcast Application Rate

Length of Control	Oryzalin Pro 4 Herbicide		Minimum Time Between Applications (months)	Total Amount Allowed Per Year (qts./acre)
	(qts./acre)	(fl. oz./1,000 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 Pro 4 Herbicide plus other labeled herbicides may be used as directed for 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 tank mix product labels for specific use directions, precautions, and limitations before use.

**Oryzalin Pro 4 Herbicide plus Roundup®:** Apply tank mix combinations of Oryzalin Pro 4 Herbicide plus Roundup® only as directed sprays in Christmas tree plantings. When applied according to use directions, Oryzalin Pro 4 Herbicide 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 Pro 4 Herbicide. Refer to the label for Roundup® for specific use directions, precautions, and limitations before use.

#### **Special Use Precautions:**

Do not apply to Douglas-fir (*Pseudotsuga menziesii*). Do not apply to seedbeds or seedling transplant beds. Apply only to established plants 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.

### **NONCROPLAND AREAS AND INDUSTRIAL SITES**

#### **Noncropland Areas – Tank Mix Combinations**

Tank mix combinations of Oryzalin Pro 4 Herbicide plus Roundup® and many other labeled herbicides may be used to control undesirable vegetation in noncropland areas such as roadsides, rights-of-way, etc. When applied according to use directions, these tank mixes will provide control of susceptible weed species listed on the respective product labels. Refer to tank mix product labels for specific use directions, precautions, and limitations before use.

#### **Broadcast Application Rates**

Length of Control	Oryzalin Pro 4 Herbicide		Minimum Time Between Applications (months)	Total Amount Allowed Per Year (qts./acre)
	(qts./acre)	(fl. oz./1,000 sq. ft.)		
2-4 months	2	1.5	2	6
4-8 months	4	3	4	12
8-12 months	6	4.5	8	12

#### **Industrial Sites – Tank Mix Combinations**

Tank mix combinations of Oryzalin Pro 4 Herbicide plus Roundup®, Spike™ herbicide, and many other labeled herbicides may be used as overtop sprays to control existing vegetation on industrial sites such as utility substations, highway guard rails, sign posts, and delineators. When applied according to use directions, these tank mixes will provide control of susceptible weed species listed on the respective product labels. Refer to tank mix product labels for specific use directions, precautions, and limitations before use.

### **WARM SEASON TURFGRASSES**

Oryzalin Pro 4 Herbicide may be applied as a preemergence treatment for control of annual grasses and certain broadleaf weeds in established warm season turf including bahiagrass, bermudagrass, buffalograss, centipedegrass, St. Augustinegrass, zoysiagrass, and established tall fescue growing in warm season areas. Established turf is defined as a dense turf having a well-anchored root system and healthy, vigorous top growth. Use Oryzalin Pro 4 Herbicide only as a part of a total turf management program that includes good fertilization practices.

Oryzalin Pro 4 Herbicide may be tank mixed with Gallery™ herbicide and applied preemergence to broaden the spectrum of broadleaf weed control in warm season turf. Refer to the label for Gallery™ for specific use directions, precautions, and limitations before use.

Any cultural practices that disturb the soil, such as aerification or verticutting should be done prior to application of Oryzalin Pro 4 Herbicide.

Oryzalin Pro 4 Herbicide will not control emerged weeds. Successful preemergence control of weeds listed on this label requires that Oryzalin Pro 4 Herbicide be applied prior to weed germination and be activated by at least ½ inch of rainfall or irrigation within 21 days of application.

Oryzalin Pro 4 Herbicide may injure turf that is not well established or is stressed or weakened due to unfavorable winter climatic conditions, drought, nematodes, or other factors which damage or weaken turf root systems. Apply Oryzalin Pro 4 Herbicide only to healthy, well-established turf that has a well-anchored root system.

Do not apply Oryzalin Pro 4 Herbicide in the spring or early summer to tall fescue turfgrass reseeded the previous fall. In such cases, apply Balan™ 2.5G granular herbicide at 60-80 pounds per acre in early summer (Round 1) and Oryzalin Pro 4 Herbicide at 1.5 quarts per acre approximately eight weeks later (Round 2). Do not apply Oryzalin Pro 4 Herbicide at the single application rate (2 quarts per acre) to established tall fescue; in such cases, apply 1.5 quarts per acre of Oryzalin Pro 4 Herbicide in an initial application, followed by a second application of 1.5 quarts per acre 8-10 weeks later.

In bermudagrass areas that have been overseeded with winter grasses, a spring application of Oryzalin Pro 4 Herbicide will thin the overseeded grasses.

### Annual Grasses Controlled by Oryzalin Pro 4 Herbicide

#### Summer Annuals:

Common Name	Scientific Name
barnyardgrass (watergrass)	<i>Echinochloa crus-galli</i>
crabgrass, large	<i>Digitaria sanguinalis</i>
crabgrass, smooth	<i>Digitaria ischaemum</i>
crabgrass	<i>Digitaria spp.</i>
crowfootgrass	<i>Dactyloctenium segyptium</i>
foxtail, bristlegrass	<i>Setaria magna</i>
foxtail, giant	<i>Setaria faberi</i>
foxtail, green (pigeongrass)	<i>Setaria viridis</i>
foxtail, robust	<i>Setaria robusta</i>
foxtail, yellow	<i>Setaria glauca</i>
goosegrass (silver crabgrass)	<i>Eleusine indica</i>
Johnsongrass (seedling only)	<i>Sorghum halepense</i>
ryegrass, Italian	<i>Lolium multiflorum</i>
sandbur, field	<i>Cenchrus incertus</i>

#### Winter Annuals:

Common Name	Scientific Name
bluegrass, annual	<i>Poa annua</i>

### Annual Broadleaf Weeds Controlled by Oryzalin Pro 4 Herbicide

#### Summer Annuals:

Common Name	Scientific Name
carpetweed	<i>Mollugo verticillata</i>
knotweed, prostrate	<i>Polygonum aviculare</i>
purslane, common	<i>Portulaca oleracea</i>

#### Winter Annuals:

chickweed, common	<i>Stellaria media</i>
henbit	<i>Lamium amplexicaule</i>

### Broadleaf Weeds Suppressed by Oryzalin Pro 4 Herbicide

Common Name	Scientific Name
groundsel, common	<i>Senecio vulgaris</i>

spurge, prostrate  
woodsorrel, yellow

*Euphorbia humistrata*  
*Oxalis stricta*

### Application Rates, Frequency, and Timing of Application

Oryzalin Pro 4 Herbicide can be applied in the spring for summer annual grass and broadleaf weed control, and in the fall for annual bluegrass (*Poa annua*) and winter annual broadleaf control.

### Broadcast Application Rates (Warm Season Turfgrasses)

Use Area	Oryzalin Pro 4 Herbicide		Minimum Time Between Applications (months)	Total Amount Allowed Per Year (qts./acre)
	(qts./acre)	(fl. oz./1,000 sq. ft.)		
All (except Florida)	1.5	1	3	6
Florida	2	1.5	3	6
Florida	1.5	1	3	4.5

### 1. Summer Annual Grasses and Broadleaf Weeds

**Single Application Program:** Apply 2 quarts per acre of Oryzalin Pro 4 Herbicide in late winter or early spring, prior to the onset of conditions favorable for annual weed germination.

**Split Application Program:** As an alternative to a single application program, Oryzalin Pro 4 Herbicide may be applied in a split application. This program is desirable when the initial application is made well in advance of weed germination and where weed control is desired for a longer period of time. Apply 1.5 quarts per acre of Oryzalin Pro 4 Herbicide as an initial application, followed by a second application of 1.5 quarts per acre 8-10 weeks later.

The second treatment of the split application may follow application of a different preemergence grass herbicide in place of the initial application of Oryzalin Pro 4 Herbicide.

### 2. Annual Bluegrass (*Poa annua*) and Winter Annual Broadleaf Weeds

In areas of heavy annual bluegrass infestation, its elimination will result in temporary thinning of turfgrass cover. Proper fertilization, irrigation, and soil incorporated reseeding should be employed to speed the restoration of desirable turfgrass cover in areas previously occupied by annual bluegrass (see section on reseeding).

Apply Oryzalin Pro 4 Herbicide as a preemergence treatment in late summer or early fall, prior to the expected germination period for annual bluegrass and winter annual broadleaf weeds. If annual bluegrass infestation is severe and its elimination will result in thinning of turfgrass cover, apply Oryzalin Pro 4 Herbicide at 1.5 quarts per acre. If thinning of turfgrass cover is not a potential problem, Oryzalin Pro 4 Herbicide may be applied at 2 quarts per acre.

### Weed Control in Florida

In Florida, apply 1.5 quarts per acre of Oryzalin Pro 4 Herbicide three times per year, or every 90-100 days, in the fall, early spring, and early summer. Do not apply more than 1.5 quarts per acre of Oryzalin Pro 4 Herbicide in any single application.

### Application Equipment

Apply Oryzalin Pro 4 Herbicide evenly over the turfgrass area. Avoid spray pattern skips and overlaps that may result in incomplete coverage or over-application. For best results, use application equipment designed to uniformly broadcast liquid herbicides. Calibrate application equipment prior to use, according to manufacturer's directions. Check equipment frequently to make sure it is working properly and distributing spray uniformly.

### Reseeding

Herbicides that control annual weeds may also affect establishment of desirable turfgrass seedlings. Reseeding should be delayed for at least 90-120 days following application of Oryzalin Pro 4 Herbicide.

When reseeding, it is essential that proper cultural practices such as soil cultivation and seedbed preparation, irrigation, and fertilization be followed. For satisfactory reseeding results following use of Oryzalin Pro 4 Herbicide, the seeding rate should be increased and equipment designed to place seed in full contact with the soil (such as the Rogers Aero Seeder) should be employed.

#### **Special Use Precautions:**

To avoid possible injury, do not apply Oryzalin Pro 4 Herbicide to:

- Cool season turfgrass species.
- Golf course putting greens and tees or lawns containing dichondra or cool season turfgrass species.
- Newly sprigged or sodded areas of bermudagrass, St. Augustinegrass, centipedegrass, or zoysiagrass until these turfgrasses are well established and have well-anchored root systems.
- Newly hydromulched areas of bermudagrass until such areas are well established.
- Bermudagrass variety "Sun Turf" when tank mixed with atrazine.

#### **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 the use of this product may be disposed of on site or at an approved waste disposal facility.

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

#### **CONDITION OF SALE AND LIMITATION OF WARRANTY AND LIABILITY**

**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product should be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather, presence of other materials or other influencing factors in the use of the product, which are beyond the control of Gro-Pro LLC or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold Gro-Pro LLC and Seller harmless for any claims relating to such factors.

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