

**QUALI-PRO**

# Oryzalin 4

*Herbicide*

<b>ACTIVE INGREDIENT:</b>	<b>% BY WT.</b>
Oryzalin: 3,5-dinitro-N <sup>4</sup> -dipropylsulfanilamide . . . . .	.41.0%
<b>INERT INGREDIENTS:</b> . . . . .	<u>59.0%</u>
<b>TOTAL:</b> . . . . .	100.0%

Contains 4 pounds of active ingredient per gallon.

EPA Reg. No. 66222-207

## **KEEP OUT OF REACH OF CHILDREN CAUTION**

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

For medical emergencies involving this product,  
contact Prosar at 1-877-250-9291.

For additional precautionary, handling, and use statements, see  
inside of this booklet.

Manufactured for:  
**Makhteshim Agan of North America, Inc.**  
4515 Falls of Neuse Road, Suite 300  
Raleigh, NC 27609

EPA 031402/Notif 030609/Trans 010410/Rev D

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13842; 13928

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## **Quali-Pro Oryzalin 4**

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-cropland and Industrial Sites
- Established Warm Season Turf (including Bahiagrass, Bermudagrass, Buffalograss, Centipedegrass, St. Augustinegrass and Zoysiagrass)
- Tall Fescue (warm season areas)
- Non-bearing fruit and nut trees and non-bearing vineyards

### **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
- 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.

## **DIRECTIONS FOR USE**

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 regulations.

## **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 requirement in this box only applies

(Continued)

### **AGRICULTURAL USE REQUIREMENTS (CONT.)**

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 to 1 inch of rainfall or irrigation, if they are performing tasks that **DO NOT** involve contact with the soil sub-surface; 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**

Quali-Pro Oryzalin 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 non-cropland and industrial sites.

Quali-Pro Oryzalin 4 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. Quali-Pro Oryzalin 4 may also be applied with mulch colorants, such as Mulch Magic or Nu-Mulch.

### **Treatment of Plant Species Not Listed on the Label for Quali-Pro Oryzalin 4**

Users who wish to use Quali-Pro Oryzalin 4 on plant species not recommended on this label may determine the suitability for use by treating a small number of such plants at a specified 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 use of Quali-Pro Oryzalin 4 on plant species not recommended on this label.

### **Aerial Application**

Do not aerially apply this product.

### **Chemigation**

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

### **Grazing**

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

### **Precaution**

Avoid spray drift to non-target areas when applying Quali-Pro Oryzalin 4. 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**

Quali-Pro Oryzalin 4 controls weeds growing from seed. Quali-Pro Oryzalin 4 will not control emerged weeds. Quali-Pro Oryzalin 4

does not control established weeds, weeds growing from stolons, rhizomes, or root pieces. Therefore, areas to be treated should be free of emerged weeds. Weed residues, pruning, 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 Quali-Pro Oryzalin 4 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 Quali-Pro Oryzalin 4 as outlined in **APPROVED USES** section of this label. In all cases, use sufficient water volume to obtain uniform coverage and deliver the desired rate of Quali-Pro Oryzalin 4 to the treated area. The volume of water used is not critical as long as the desired rate of Quali-Pro Oryzalin 4 is delivered uniformly across the area treated. When calibrating, determine the volume of water delivered by the sprayer to a given area (100 sq ft, 1 acre, etc.). Then mix the desired rate of Quali-Pro Oryzalin 4 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 Quali-Pro Oryzalin 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 1000 square feet. Use this calibration volume to determine the amount of water and Quali-Pro Oryzalin 4 herbicide needed to treat the target area (see the following calibration example). **Note:** Sprayer calibration (volume of spray needed to treat 1000 square feet) will vary with each individual operator.

### **Steps in Calibration**

1. Mark an area of 1000 square feet (i.e. 20 by 50 feet, or 25 by 40).

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 1000 square feet.
4. Determine the application rate (fl oz/1000 sq ft) for Quali-Pro Oryzalin 4 from the **APPROVED USES** section of this label.
5. To each volume of water used, as measured in step 3, add the amount of Quali-Pro Oryzalin 4 as determined in step 4.

**Example:** If the sprayer used 2 gallons of water to cover 1000 square feet and the desired application rate of Quali-Pro Oryzalin 4 is 3 fluid oz/1000 square feet, then you would add 3 fluid ounces of Quali-Pro Oryzalin 4 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.

#### Quali-Pro Oryzalin 4-Alone

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

#### Quali-Pro Oryzalin 4-Tank Mix Combinations

Prior to 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 Quali-Pro Oryzalin 4. Sparger pipe agitators generally provide the best agitation in spray tanks.

**Mixing Order:** Fill the tank 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); Quali-Pro Oryzalin 4 and other aqueous suspensions (AS); flowables (F); 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 pre-mixing with water (slurrying). Adding the slurried material to the spray tank through a 20- or 35-mesh wetting screen 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**

Quali-Pro Oryzalin 4 will remain stable on the soil surface up to 21 days following application. In the absence of timely rainfall, irrigation can be used to activate Quali-Pro Oryzalin 4. A minimum of one-half (1/2) inch of rain or its equivalent in sprinkler irrigation is necessary to activate Quali-Pro Oryzalin 4. 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. If Quali-Pro Oryzalin 4 is not activated by rainfall, irrigation, or cultivation within 21 days of application, or existing weeds have not been removed, erratic weed control may result.

## WEEDS CONTROLLED BY QUALI-PRO ORYZALIN 4

### Annual Grasses

#### Common Name

Barley, little  
Barnyardgrass (watergrass)  
Bluegrass, annual  
Crabgrass, large  
Crabgrass, smooth  
Crowfootgrass  
Cupgrass, southwestern  
Foxtail, bristlegrass  
Foxtail, giant  
Foxtail, green (pigeongrass)  
Foxtail, robust  
Foxtail, yellow  
Goosegrass (silver crabgrass)  
Johnsongrass (seeding only)  
Junglerice  
Lovegrass, Mexican  
Lovegrass, orcutt  
Oat, wild  
Panicum, browntop  
Panicum, fall (spreading panicgrass)  
Panicum, Texas  
(buffalograss)  
(Coloradograss)  
Ryegrass, Italian  
Signalgrass (Brachiaria)  
Sprangletop, red  
Witchgrass

#### Scientific Name

Hordeum pusillum  
Echinochloa crus-galli  
Poa annua  
Digitaria sanguinalis  
Digitaria ischaemum  
Dactyloctenium aegyptium  
Eriochloa gracilis  
Setaria magna  
Setaria faberi  
Setaria viridis  
Setaria robusta  
Setaria glauca  
Eleusine indica  
Sorghum halepense  
Echinochloa colonum  
Eragrostis mexicana  
Eragrostis orcuttiana  
Avena fatua  
Panicum fasciculatum  
Panicum dichotomiflorum  
Panicum texanum  
  
Cenchrus incertus  
Brachiaria spp.  
Leptochloa filiformis  
Panicum capillare

### Broadleaf Weeds

#### Common Name

Bittercress  
Carpetweed  
Chickweed, common  
Fiddleneck, coast  
Filaree, redstem

#### Scientific Name

Cardamine oligosperma  
Mollugo verticillata  
Stellaria media  
Amsinckia intermedia  
Erodium cicutarium

Filaree, whitestem  
Groundsel, common  
Henbit  
Knotweed, prostrate  
Lambsquarters  
Pigweed, prostrate  
Pigweed, redroot  
Pigweed, spring  
Pigweed, tumble  
Puncturevine  
Purslane, common  
Pulsey, Florida  
(Florida purslane)  
(Mexican clover)  
(pulsey)  
Rocket, London  
Rockpurslane, desert  
Shepherdspurse  
Spurge, prostrate  
Woodsorrel, yellow

Erodium moschatum  
Senecio vulgaris  
Lamium amplexicaule  
Polygonum aviculare  
Chenopodium album  
Amaranthus blitoides  
Amaranthus retroflexus  
Amaranthus hybridus  
Amaranthus albus  
Tribulus terrestris  
Portulaca oleracea  
Richardia scabra

Sisymbrium irio  
Calandrinia ciliata  
Capsella bursa-pastoris  
Euphorbia humistrata  
Oxalis stricta

#### **WEEDS SUPPRESSED BY QUALI-PRO ORYZALIN 4**

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:

##### **Common Name**

Horseweed  
Ladysthumb  
Lettuce, prickly  
Mallow, common  
Milkweed, climbing  
Morningglory  
Mustard, black  
Mustard, wild  
Nightshade, black  
Ragweed, common  
Smartweed

##### **Scientific Name**

Conyza canadensis  
Polygonum persicaria  
Lactuca serriola  
Malva neglecta  
Sarcostemma cynanchoides  
Ipomoea spp.  
Brassica nigra  
Brassica kaber  
Solanum nigrum  
Ambrosia artemisiifolia  
Polygonum pensylvanicum

Sowthistle, annual  
 Spurge, spotted  
 Teaweed (prickly sida)  
 Velvetleaf  
 Wheat, volunteer

Sonchus oleraceus  
 Euphorbia maculata  
 Sida spinosa  
 Abutilon theophrasti  
 Triticum spp.

## APPROVED USES

### ORNAMENTAL PLANTINGS

**Quali-Pro Oryzalin 4 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 special use directions.)**

### Broadcast Application Rates

Labeled Use Site	Length of Control	Quali-Pro Oryzalin 4 (qt/acre)	Quali-Pro Oryzalin 4 (fl oz/1000 sq ft)	Minimum Time Between Applications (Months)	Total Amount Allowed Per Year (qt/acre)
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 Quali-Pro Oryzalin 4 plus Roundup/Glyphosate, and many other labeled herbicides may be used to control undesirable vegetation in ornamental areas. Quali-Pro Oryzalin 4 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 Quali-Pro Oryzalin 4 will provide control of susceptible weed species listed on the respective labels. Refer to tank mix product labels for

specific use directions, precautions, and limitations before use.

**Quali-Pro Oryzalin 4 Plus Roundup/Glyphosate:** Tank mix combinations of Quali-Pro Oryzalin 4 plus Roundup are recommended to control existing undesirable vegetation. Applied as directed, Quali-Pro Oryzalin 4 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 Quali-Pro Oryzalin 4. 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 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 Quali-Pro Oryzalin 4 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 four 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 Quali-Pro Oryzalin 4 for at least 90 days or crop injury may occur.

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

For soils treated with Quali-Pro Oryzalin 4 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 landscaping plantings, do not exceed the 2 quart per acre rate of Quali-Pro Oryzalin 4 or crop injury may occur.

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

Deutzia gracilis (slender deutzia)  
Pseudotsuga menziesii (Douglas-fir)  
Thuja occidentalis 'Techny' (Techny arborvitae)  
Tsuga canadensis (eastern hemlock)  
Begonia spp. (begonia)  
Coleus hybridus (coleus)

**Quali-Pro Oryzalin 4 may be used on the following established plant species. (Note limitations on recommended treatment methods.)**

## TREES

### Recommended Treatment Method

F = Field Grown

C = Container

<u>Scientific Name</u>	<u>Common Name</u>	<u>Grown</u>
Abies balsamea	Fir, balsam	F
Abies concolor	Fir, white	F
Abies fraseri	Fir, fraser	F
Abies grandis	Fir, grand	F
Abies veitchi	Fir, Vietch	F

**TREES (cont.)****Recommended Treatment Method****F = Field Grown****C = Container**

<b><u>Scientific Name</u></b>	<b><u>Common Name</u></b>	<b><u>Grown</u></b>
Abies lasiocarpa	Fir, alpine	F
Abutilon hybridum	Albus-flowering Maple	F
	Luteus-flowering maple	F
	Roseus-flowering maple	F
	Tangerine-flowering maple	F
	Vesuvius red-flowering maple	F
Acer ginnala	Flame maple	F
Acer rubrum	Red sunset maple	F
Acer saccharinum	Silver maple	F
Acer spp.	Maple	F
Alsophila australis	Australian tree fern	C, F
Areacastrum romanzoffianum	Queen palm	F
Betula nigra	Birch, river	F
Betula papyrifera	Paper birch	F
Betula pendula	Birch, white	F
Bucida buceras	Black olive	F
Carya spp.	Pecan, ornamental	C,F
Cedrus atlantica	Atlas cedar	C,F
Cedrus deodara	Deodar cedar	C,F
Ceratonia siliqua	Carob	F
Cercidium floridum	Palo Verde, blue	F
Cercis Canadensis	Redbud	C,F
Chamaecyparis lawsoniana	Falsecypress, Lawson	F
Chamaecyparis obtusa	Filicoides-fernspray cypress	F
	Gracilis-slender Hinoki cypress	F
Chamaecyparis pisifera	Sawara-false cypress	F
	Squarrosa-moss cypress	F
Chamaedorea cataractarum	Cat Palm	F

**TREES (cont.)****Recommended Treatment Method**

F = Field Grown

C = Container

<b><u>Scientific Name</u></b>	<b><u>Common Name</u></b>	<b><u>Grown</u></b>
Chamaedorea		
costaricana	Palm	F
Chamaedorea elegans	Parlor Palm	F
Citrus spp.	Citrus, ornamental	C,F
Comus florida	Dogwood, flowering	F
Cryptomeria japonica	Cryptomeria, Japanese	C,F
Cupaniopsis		
anacardioides	Carrot Wood	F
Cupressus		
arizonica (glabra)	Cypress, Arizona	C,F
Cupressus glabra	Arizona cypress	C,F
Cupressocyparis		
leylandii	Leyland cypress	C,F
Cupressus sempervirens	Cypress, Italian	C,F
Dicksonia anarctica	Tasmanian tree fern	C,F
Elaeagnus angustifolia	Russian olive	C,F
Eucalyptus camaldulensis	Red gum eucalyptus	F
Eucalyptus cinerea	Eucalyptus, mealy	F
	Silver dollar eucalyptus	F
Eucalyptus nicholii	Eucalyptus, narrow-leaved	F
Eucalyptus sideroxylon	Eucalyptus, red ironbark	F
Ficus benamina	Ficus	F
Fraxinus spp.	Ash	F
Ginkgo biloba	Ginkgo (Maidenhair tree)	C,F
Gleditsia triacanthos	Honey locust	F
Heteromeles arbutiflora	Toyon	F
Juniperus virginiana	Redcedar, Eastern	F
Koelreuteria paniculata	Goldenrain tree	F
Liquidambar styraciflua	Sweetgum, American	C,F
Magnolia spp.	Magnolia	F
Malus spp.	Crabapple	F
Morus alba	White mulberry	F

**TREES (cont.)****Recommended Treatment Method****F = Field Grown****C = Container**

<b><u>Scientific Name</u></b>	<b><u>Common Name</u></b>	<b><u>Grown</u></b>
Picea abies	Pendula-weeping Norway Spruce	F
	Repens-spreading Norway Spruce	F
	Spruce, Norway	F
Picea englemanni	Spruce, Englemann	F
Picea glauca	Spruce, white	F
	Conica-dwarf Alberta spruce	F
Picea glauca conica	Dwarf Alberta spruce	F
Picea mariana	Spruce, black	F
Picea pungens	Glauca-Colorado blue spruce	F
	Hoopsii-Hoop's blue spruce	F
	Koster-Koster blue spruce	F
	Spruce, Colorado	C,F
Pinus aristata	Bristlecone pine	F
Pinus canariensis	Canary Island pine	F
Pinus contorta	Shore pine, beach pine	F
Pinus eldarica	Eldarica pine	F
Pinus halepensis	Aleppo pine	C,F
Pinus radiata	Monterey pine	F
Pinus spp.	Pine	C,F
Pinus strobus	Eastern white pine	F
Pinus sylvestris	Scotch pine	F
Pinus thunbergiana	Japanese black pine	F
Platanus occidentalis	American sycamore	F
Platanus racemosa	California sycamore	F
Podocarpus spp.	Podocarpus	F
Populus deltoides	Cottonwood	F
	Cottonwood (grown for pulp)	F
Prunus caroliniana	Laurelcherry, Carolina	F
Prunus glandulosa	Dwarf flowering almond	C,F
Prunus laurocerasus	Laurelcherry, English	F
Prunus mahaleb	Cherry, Mahaleb	F

## TREES (cont.)

### Recommended Treatment Method

F = Field Grown

C = Container

<u>Scientific Name</u>	<u>Common Name</u>	<u>Grown</u>
<i>Prunus yedoensis</i>	Yoshino flowering cherry	F
<i>Pyrus communis</i>	Pear	F
<i>Quercus palustris</i>	Pin oak	F
<i>Quercus phellos</i>	Willow oak	F
<i>Quercus rubra</i>	Red oak	C,F
<i>Quercus</i> spp.	Oak	C,F
<i>Salix babylonica</i>	Babylon weeping willow	F
	Corkscrew willow	F
<i>Schinus molle</i>	California pepper tree	F
<i>Sequoia</i> <i>sempervirens</i>	Redwood, coast	F
<i>Sequoiadendron</i> <i>giganteum</i>	Giant sequoia	F
<i>Swietenia mahogani</i>	Mahogany	F
<i>Tabebuia caraiba</i>	Yellow Tab	F
<i>Tilia cordata</i>	Linden, little leaf	C,F
<i>Ulmus parvifolia</i>	Chinese elm	F
<i>Umbellularia</i> <i>californica</i>	California laurel	F
<i>Washingtonia</i> <i>robusta</i>	Mexican fan palm	F

## SHRUBS

### Recommended Treatment Method

F = Field Grown

C = Container

<u>Scientific Name</u>	<u>Common Name</u>	<u>Grown</u>
<i>Abelia grandiflora</i>	Glossy abelia	F
<i>Acacia redolens</i>	Acacia, prostrate	F
<i>Agave Americana</i>	Century plant	F
<i>Agave macroculmis</i>	Agave	F
<i>Anisodonteia</i> <i>hypomandarum</i>	Cape mallow	C,F

**SHRUBS (cont.)****Recommended Treatment Method****F = Field Grown****C = Container**

<b><u>Scientific Name</u></b>	<b><u>Common Name</u></b>	<b><u>Grown</u></b>
Arctostaphylos stanfordiana	Manzanita, Stanford	F
Astilbe chinensis	Astilbe/false spirea	C,F
Baccharis pilularis	Coyotebush	F
Berberis thunbergii	Aurea-golden Japanese barberry	C,F
	Crimson pygmy barberry	C,F
	Atropurea-redleaf Japanese barberry	C,F
	Barberry, Japanese	C,F
Bougainvillea spp.	Barbara Karst	F
	California gold	F
	Scarlet O'Hara	F
	Texas Dawn	F
Buxus microphylla	Littleleaf boxwood	F
Buxus microphylla japonica	Boxwood, Japanese	C,F
Buxus sempervirens	Boxwood, common	C,F
Callisternon citrinus	Bottlebrush, lemon	C,F
Cassia artemisioides	Cassia, feathery	F
Ceanothus americanus	Jerseytea, redroot	C,F
Ceanothus spp.	Wild lilac	C,F
Chaenomeles japonica	Flowering quince	C,F
Chamaecyparis obtusa	Kosteri cypress	F
	Nana-dwarf Hinoki cypress	F
	Torulosa cypress	F
Chamaecyparis pisifera	Squarrosa Minima cypress	F
Chamaecyparis pisifera spp.	Filifera-thread cypress	F
Chrysalidocarpus lutescens	Areca palm	F
Cleyera japonica	Cleyera, Japanese	C,F
Coleonema pulchrum	Pink breath of heaven	C,F
Comus alba	Sibirica-Siberian dogwood	F

**SHRUBS (cont.)****Recommended Treatment Method****F = Field Grown****C = Container**

<b><u>Scientific Name</u></b>	<b><u>Common Name</u></b>	<b><u>Grown</u></b>
Comus kousa	Dogwood, kousa	C,F
Comus stolonifera	Flaviramea-yellowtwig dogwood	F
Cotoneaster adpressus	Praecox-early cotoneaster	F
Cotoneaster apiculatus	Cotoneaster, cranberry	C,F
Cotoneaster buxifolius	Cotoneaster, brightbead	F
Cotoneaster congestus	Cotoneaster, Pyrenees	F
Cotoneaster dammeri	Cotoneaster, bearberry	C,F
Cotoneaster himalayan	Himalayan cotoneaster	F
Cotoneaster horizontalis	Cotoneaster, rock	C,F
Cotoneaster lacteus	Cotoneaster, parney	C,F
Cotoneaster microphyllus	Cotoneaster, rockspray	F
Cotoneaster salicifolia	Willowleaf cotoneaster	C,F
Cytisus praecox	Hollandia-warminster broom	F
Cytisus scoparius	Lena-Scotch broom	F
Dasyliion wheeleri	Sotol, desert spoon	F
Deutzia crenata	Nakiana-dwarf deutzia	F
Dodonaea viscosa	Hopseedbush, clammy	F
	Hopseed bush	F
Escallonia exoniensis	Escallonia	C,F
Euonymus alata	Euonymus, winged	F
Euonymus fortunei	Canadale gold euonymus	C,F
	Emerald'n gold euonymus	C,F
	Euonymus, stringybark	C,F
	Wintercreeper	C,F
Euonymus japonica	Euonymus, evergreen	C,F
	Silver king euonymus	F
Euonymus kiatschovica	Spreading euonymus	F
Euonymus vegetus	Bigleaf wintercreeper	C,F
Fatshedera lizei	Fatshedera	C,F
Fatsia japonica	Japanese aralia	C,F
Felicia amelloides	Blue marguerite	C,F
Forsythia intermedia	Forsythia, border	F
Gardenia jasminoides	Gardenia	C,F

**SHRUBS (cont.)****Recommended Treatment Method****F = Field Grown****C = Container**

<b><u>Scientific Name</u></b>	<b><u>Common Name</u></b>	<b><u>Grown</u></b>
Genista pilosa	Woadwaxen	F
Hibiscus rosa-sinensis	Ross Estey-hibiscus	F
	Hibiscus, Chinese	F
Hibiscus syriacus	Rose of Sharon, Red Bird	F
	Rose of Sharon, Red Heart	F
	Rose of Sharon, Woodbridge	F
	Rose of Sharon (Shrubalthea)	F
Ilex aquifolium	Balkans holly	F
	Gold coast holly	F
	Holly, English	F
Ilex aquipemyi	San Jose holly	C,F
Ilex cornuta	Dwarf Burford holly	C,F
	Holly, Chinese	C,F
Ilex crenata	Compacta-dwarf Japanese holly	C,F
	Convexa holly	C,F
	Helleri-Heller's Japanese holly	C,F
	Holly, Japanese	C,F
Ilex glabra	Nordica-inkberry holly	F
Ilex meserveae	Blue boy holly	F
	Blue girl holly	F
	Ebony magic holly	F
Ilex vomitoria	Nana-dwarf yaupon holly	C,F
	Pendula-weeping yaupon holly	C,F
	Yaupon holly	C,F
Juniperus chinensis	Media-old gold juniper	C,F
Juniperus conferta	Emerald sea shore juniper	F
Juniperus horizontalis	Huntington blue juniper	C,F
	Wiltonii-blue carpet juniper	C,F
Juniperus procumbens	Nana-dwarf Japanese garden juniper	C,F
Juniperus prostrata	Prostrata juniper	C,F

**SHRUBS (cont.)****Recommended Treatment Method****F = Field Grown****C = Container**

<b><u>Scientific Name</u></b>	<b><u>Common Name</u></b>	<b><u>Grown</u></b>
Juniperus sabina	Broadmoor juniper	F
	Foemina-Hicks juniper	F
	Tamariscifolia-Tam juniper	F
Juniperus scopulorum	Emerald green juniper	F
Juniperus spp.	Juniper	C,F
Juniperus squamata	Blue juniper	F
	Blue star juniper	F
	Parsonii juniper	F
Justicia brandegeana	Shrimp plant	C,F
Jusiticia spicigera	Honeysuckle, Mexican	F
Kalmia latifolia	Laurel, mountain	F
Lagerstroemia indica	Crape myrtle	C,F
Lavandula angustifolia	English lavender	C,F
Leucothoe axillaris	Leucothoe, coast	F
Leucothoe fontanesiana	Leucothoe, drooping	F
Ligustrum amurense	Privet, amur	C,F
Ligustrum japonicum	Privet, Japanese	C,F
	Yellow tip ligustrum	C,F
Ligustrum lucidum	Privet, glossy	C,F
Ligustrum ovalifolium	California privet	F
Ligustrum texanum	Howardi privet	F
	Wax leaf privet	F
Ligustrum vicaryi	Privet, golden	C,F
	Vicary golden privet	C,F
Livistona chinensis	Chinese fountain palm	F
Lonicera fragrantissima	Winter honeysuckle	F
Lonicera periclymenum	Flowering woodbine	F
	Serotina woodbine	F
Lonicera sempervirens	Trumpet honeysuckle	F
Lorpetalum chinense	(No common name)	C,F
Mahonia aquifolium	Oregon grape	F
Myoporum parvifolium	Myoporum, prostrate	F
Myrtus communis	Myrtle, true	C,F

**SHRUBS (cont.)****Recommended Treatment Method****F = Field Grown****C = Container**

<b><u>Scientific Name</u></b>	<b><u>Common Name</u></b>	<b><u>Grown</u></b>
Nandina domestica	Compacta-dwarf heavenly bamboo	C,F
	Harbour dwarf-heavenly bamboo	C,F
	Heavenly bamboo (Nandina)	C,F
	Nana compacta-heavenly bamboo	C,F
	Nana purpurea-heavenly bamboo	C,F
	Woods dwarf-heavenly bamboo	C,F
Nerium oleander	Hardy red oleander	C,F
	Oleander	C,F
	Ruby lace oleander	C,F
Osmanthus heterophyllus	Osmanthus, holly-leaf	F
Pachysandra terminalis	Japanese spurge	C,F
Philadelphus spp.	Mockorange	C,F
Phoenix roeloenii	Pigmy date palm	F
Photinia fraseri	Fraser's photinia	C,F
	Photinia	C,F
	Lily-of-the-valley	F
Pieris japonica	Snowdrift lily-of-the-valley	F
	Temple bells lily-of-the-valley	F
	Valley rose lily-of-the-valley	F
	Andromeda	C,F
	Pittosporum spp.	Pittosporum
Pittosporum tobira	Green pittosporum	F
	Japanese pittosporum	F
	Tibira	F
	Wheeler's dwarf pittosporum	F
Platycladus orientalis	Arborvitae, Oriental	C,F
Plumbago ariculata	Blue cape plumbago	F
Podocarpus macrophyllus	Yewpine	C,F
Potentilla fragiformis	Cinquefoil	F
Potentilla fruticosa	Cinquefoil	C,F
Protea neriifolia	Protea	F
Pyracantha coccinea	Firethorn, scarlet	C,F
Pyracantha fortuneana	Lolendei Monrovia pyracantha	C,F

**SHRUBS (cont.)****Recommended Treatment Method****F = Field Grown****C = Container**

<b><u>Scientific Name</u></b>	<b><u>Common Name</u></b>	<b><u>Grown</u></b>
Pyracantha fortuneana	Monon pyracantha	C,F
	Red elf hybrid pyracantha	C,F
	Rutgers hybrid pyracantha	C,F
	Santa Cruz pyracantha	C,F
	Victory pyracantha	C,F
Pyracantha skoidzumi	Firethorn, formosa	C,F
Pyracantha fortuneana	Firethorn	C,F
Rhaphiolepis indica	Enchantress-Moness raphiolepis	F
	Rhaphiolepis (India hawthorn)	C,F
	Springtime-Monme raphiolepis	F
Rhaphiolepis ovata	Roundleaf raphiolepis	F
Rhipsalidopsis gaertneri	Eastercactus	C,F
Rhododendron calendulaceum	Flame azalea	F
Rhododendron campylocarpum	Butterfly rhododendron	F
Rhododendron carolinianum x daurium	PJM rhododendron	F
Rhododendron catawbiense	Catawba album rhododendron	C,F
	Catawba rhododendron	C,F
	Lord Roberts rhododendron	C,F
	Rocket rhododendron	C,F
Rhododendron forrestii x griersonianum	Elizabeth rhododendron	F
Rhododendron hybrid spp.	America rhododendron	F
	English Roseum rhododendron	F
	Nova Zembla rhododendron	F
	Scintillation rhododendron	F
Rhododendron impeditum	Rhododendron	F
Rhododendron indica	Formosa azalea	C,F
	Waucabusa azalea	C,F

**SHRUBS (cont.)****Recommended Treatment Method****F = Field Grown****C = Container**

<b><u>Scientific Name</u></b>	<b><u>Common Name</u></b>	<b><u>Grown</u></b>
Rhododendron kerume	Coral bells azalea	C,F
	Hino crimson azalea	C,F
	Hino pink azalea	C,F
	Snow azalea	C,F
Rhododendron maximum	Rhodie max (rosebay)	C,F
Rhododendron mucronulatum	Rhododendron	F
Rhododendron satuski	Gumpo pink azalea	F
	Higasa azalea	F
Rhododendron spp.	Azalea	C,F
	Rhododendron	C,F
Rhododendron spp. hybrids	Carror azalea	C,F
	Girard Roberta azalea	F
	Golden flare exbury azalea	F
Rhus lancea	Sumac, African	C,F
Rosa rugosa	Ramanas rose	F
Rosmarinus officinalis	Rosemary	F
Senecio cineraria	Dusty miller	C,F
Spiraea vanhouttei	Bridal wreath	F
Syringa vulgaris	Lilac, common	C,F
Syzygium paniculata	Brush cherry	C,F
Taxus cuspidate	Yew, Japanese	F
Taxus media	Yew	F
Thuja occidentalis	Arborvitae, American	C,F
	Emerald arborvitae	F
	Globosa-globe arborvitae	F
	Little giant—dwarf arborvitae	F
	Nigra-dark American arborvitae	F
	Pyramidalis arborvitae	F
	Rheingold arborvitae	F
	Woodwardii arborvitae	F

**SHRUBS (cont.)****Recommended Treatment Method****F = Field Grown****C = Container**

<b><u>Scientific Name</u></b>	<b><u>Common Name</u></b>	<b><u>Grown</u></b>
Thuja orientalis	Aureus nana-dwarf golden arborvitae	F
	Minima glauca-dwarf arborvitae	F
Thuja plicata	Red Cedar, Western	F
Trachelospermum jasminoides	Star jasmine, Chinese	F
Veitchia merrilli	Christmas palm	F
Viburnum carlesii	Koreanspice viburnum	C,F
Viburnum davidii	David viburnum	F
Viburnum japonicum	Viburnum	F
Viburnum judd (V x judii)	Viburnum	C,F
Viburnum opulus sterile	Common snowball viburnum	F
Viburnum plicatum tomentosum	Doublefile viburnum	F
Viburnum setigerum	Tea viburnum	F
Viburnum suspensum	Viburnum Sandankwa	F
Viburnum tinus	Viburnum Laurustinus Compactum-spring bouquet viburnum	C,F  F
Viburnum tinus compactum	Spring bouquet viburnum	F
Viburnum trilobum Compactum	Dwarf cranberry bush	F
Viburnum x pragense	Viburnum	F
Weigela florida	Bristol ruby weigela Java red weigela Minuet weigela Weigela, oldfashioned	F F F F
Xylosma congestum	Xylosma	F
Yucca elata	Yucca soaptree	C,F
Yucca recurvifolia	Yucca pendulous	F

## GROUNDCOVERS/PERENNIALS

### Recommended Treatment Method

F = Field Grown

C = Container

<u>Scientific Name</u>	<u>Common Name</u>	<u>Grown</u>
Agapanthus africanus	Lily-of-the-Nile	C,F
Ajuga spp.	Carpet bugle	F
Arctotheca calendula	Cape weed	F
Asparagus retrofractus	(No common name)	C,F
Asparagus varieegata	Tree fern	C,F
Aster novae-angliae	New England aster	C,F
Aster novi-belgii	New York aster	C,F
Athyrium nipponimcum	Japanese painter fern	C,F
Brassica oleracea	Wild cabbage	C,F
Callistepheus chinensis	China Aster	C,F
Campanula elatines	Bellflower	C,F
Carpobrotus edulis	Ice plant, largeleaf (see label)	F
Clytostoma callistegiodes	Trumpet vine, violet	C,F
Cortaderia selloana	Pampas grass	F
Cuphea hyssopifolia	False Mexican heather	C,F
Delosperma alba	White iceplant	F
Dietes vegeta	Fortnight lily	C,F
Digitalis mertonensis	Foxglove	C,F
Doronicum cordatum	Leopard's bane	C,F
Drosanthemum floribundum	Trailing rosea iceplant	F
Erianthus ravennae	Hardy pampus grass	C,F
Festuca ovina glauca	Blue fescue	F
Gaillardia grandiflora	Blanket flower	C,F
Gazania rigens leucolaena	Gazania, trailing	C,F
Gazania spp.	Gazania	F
Hedera canariensis	Ivy, Algerian	F
Hedera helix	Ivy, English	F
Heliotropium fragrans	Common heliotrope	C,F
Hemerocallis spp.	Daylily	C,F
Hosta lancifolia	Albo-marginata hosta	C,F
Hosta spp.	Lily, plantain	C,F

**GROUNDCOVERS/PERENNIALS (cont.)****Recommended Treatment Method****F = Field Grown****C = Container**

<b><u>Scientific Name</u></b>	<b><u>Common Name</u></b>	<b><u>Grown</u></b>
Heuchera micrantha	Coral bells	C,F
Hypericum spp.	St. Johnswort	C,F
Iberis sempervirens	Evergreen candytuft	C,F
Lampranthus spectabilis	Trailing iceplant	F
Leptospermum scaparium	New Zealand teatree/Manuka	C,F
Limonium perezii	Statice/Sea lavender	C,F
Liriope gigantea	White lily turf	F
Liriope muscari	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
Lobelia erinus	Edging lobelia	C,F
Lonicera japonica	Honeysuckle, Japanese	F
Mesembryanthemum crystallinum	Ice plant (see label)	F
Ophiopogon japonicus	Mondo grass	F
Osteospermum fruitocusum	Daisy, trailing African	F
Pachysandra terminalis	Japanese spurge	F
Pennisetum setaceum	Fountaingrass	C,F
Polystichum polyblepharum	Tassel fern	C,F
Sedum brevifolium	Stonecrop	C,F
Sedum kamtschaticum	Stonecrop	C,F
Sedum spurium	Stonecrop, two row	C,F
Tulbaghia violacea	Society garlic	C,F
Verbena rigida	Veined verbena	C,F
Veronica spp.	Speedwell	C,F
Vinca major	Periwinkle, bigleaf	F
Vinca minor	Periwinkle, dwarf	F

## FLOWERS

### Recommended Treatment Method

F = Field Grown

C = Container

<u>Scientific Name</u>	<u>Common Name</u>	<u>Grown</u>
Achillea spp.	Yarrow	C,F
Antirrhinum majus	Snapdragon	F
Caladium bicolor	Caladium, fancy leafed	F
Chrysanthemum spp.	Chrysanthemum	C,F
Coreopsis lanceolata	Coreopsis	F
Coreopsis verticulata	Threadleaf coreopsis	C,F
Dianthus barbatus	Sweet William	F
Dianthus gratianopolitanus	Cheddar pink	C,F
Dicentra spectabilis	Bleeding heart	C,F
Dimorphotheca spp.	Marigold, cape	F
Echinacea purpurea	Coneflower, purple	C,F
Evolvulus nuttallianus	Blue daze	C,F
Geum quellyon	Geum	F
Gladiolus hortulanus	Gladiolus	F
Gypsophila paniculata	Baby's breath	F
Impatiens wallerana	Impatiens (Busy lizzie)	F
Iris spp.	Iris, bearded	F
Liatris spicata	Blazing star	C,F
Pelargonium hortorum	Geranium	F
Petunia spp.	Petunia	C,F
Portulaca grandiflora	Moss, rose	F
Ranunculus asiaticus	Ranunculus, Persian	F
Rosa spp.	Rose	F
Rudbeckia fulgida	Blackeyed susan	C,F
Rudbeckia hirta	Daisy, gloriosa (black-eyed Susan)	F
Salvia spp.	Salvia (Sage)	F
Stokesia laevis	Aster, stokes	F
Strelitzia reginae	Bird of paradise	F
Tagetes spp.	Marigold	F
Viola wittrockiana	Pansy	F
Zinnia elegans	Zinnia, common	F

## NON-BEARING\* TREES AND VINES

<u>Common Name</u>	<u>Recommended Treatment Method</u> 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
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

## NON-BEARING\* TREES AND VINES

**Recommended  
Treatment Method**  
**F = Field Grown**  
**C = Container  
Grown**

### Common Name

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**

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

### **Broadcast Application Rates**

Time of Application	Soil Texture	Quali-Pro Oryzalin 4 (qt/acre)	Quali-Pro Oryzalin 4 (fl oz/ 1000 sq ft)	Minimum Time Between Applications (Months)	Total Amount Allowed Per Year (qt/acre)
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 3/4 inch.

Do not apply to gladioli corms prior to emergence or less than one (1) inch in diameter.

## SHADEHOUSE AREAS

Quali-Pro Oryzalin 4 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

### Quali-Pro Oryzalin 4-Alone

Apply Quali-Pro Oryzalin 4 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 Rates

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

### Tank Mix Combinations

Tank mix combinations of Quali-Pro Oryzalin 4 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 tank mix product labels for specific use directions, precautions, and limitations before use.

**Quali-Pro Oryzalin 4 Plus Roundup/Glyphosate:** Apply tank mix combinations of Quali-Pro Oryzalin 4 plus Roundup only as directed sprays in Christmas tree plantings. When applied according to use directions, Quali-Pro Oryzalin 4 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 Quali-Pro Oryzalin 4. 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.

### **NON-CROPLAND AREAS AND INDUSTRIAL SITES**

#### **Non-cropland Areas—Tank Mix Combinations**

Tank mix combinations of Quali-Pro Oryzalin 4 plus Roundup/Glyphosate and many other labeled herbicides may be used to control undesirable vegetation in non-cropland 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**

<b>Length of control</b>	<b>Quali-Pro Oryzalin 4 (qt/acre)</b>	<b>Quali-Pro Oryzalin 4 (fl oz/ 1000 sq ft)</b>	<b>Minimum Time Between Applications (Months)</b>	<b>Total Amount Allowed Per Year (qt/acre)</b>
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 Quali-Pro Oryzalin 4 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 delimiters. 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**

Quali-Pro Oryzalin 4 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 Quali-Pro Oryzalin 4 only as a part of a total turf management program that includes good fertilization practices.

Quali-Pro Oryzalin 4 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 Quali-Pro Oryzalin 4.

Quali-Pro Oryzalin 4 will not control emerged weeds. Successful preemergence control of weeds listed on this label requires that Quali-Pro Oryzalin 4 be applied prior to weed germination and be activated by at least one-half (1/2) inch of rainfall or irrigation within 21 days of application.

Quali-Pro Oryzalin 4 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 Quali-Pro Oryzalin 4 only to healthy, well-established turf that has a well-anchored root system.

Do not apply Quali-Pro Oryzalin 4 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 Quali-Pro Oryzalin 4 at 1.5 quarts per acre approximately eight weeks later (Round 2). Do not apply Quali-Pro Oryzalin 4 at the single application rate (2 quarts per acre) to established tall fescue; in such cases, apply 1.5 quarts per acre of Quali-

Pro Oryzalin 4 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 Quali-Pro Oryzalin 4 will thin the overseeded grasses.

### **Annual Grasses Controlled by Quali-Pro Oryzalin 4** **Summer Annuals:**

<b><u>Common Name</u></b>	<b><u>Scientific Name</u></b>
Barnyardgrass (watergrass)	Echinochloa crus-galli
Crabgrass, large	Digitaria sanguinalis
Crabgrass, smooth	Digitaria ischaemum
Crabgrass	Digitaria spp.
Crowfootgrass	Dactyloctenium aegyptium
Foxtail, bristlegass	Setaria magna
Foxtail, giant	Setaria faberi
Foxtail, green (pigeongrass)	Setaria viridis
Foxtail, robust	Setaria robusta
Foxtail, yellow	Setaria glauca
Goosegrass (silver crabgrass)	Eleusine indica
Johnsongrass (seedling only)	Sorghum halepense
Ryegrass, Italian	Lolium multiflorum
Sandbur, field	Cenchrus incertus

### **Winter Annuals:**

<b><u>Common Name</u></b>	<b><u>Scientific Name</u></b>
Bluegrass, annual	Poa annua

### **Annual Broadleaf Weeds Controlled by Quali-Pro Oryzalin 4** **Summer Annuals:**

<b><u>Common Name</u></b>	<b><u>Scientific Name</u></b>
Carpetweed	Mollugo verticillata
Knotweed, prostrate	Polygonum aviculare
Purslane, common	Portulaca oleracea

### **Winter Annuals:**

<b><u>Common Name</u></b>	<b><u>Scientific Name</u></b>
Chickweed, common	Stellaria media
Henbit	Lamium amplexicaule

## Broadleaf Weeds Suppressed by Quali-Pro Oryzalin 4

### Common Name

Groundsel, common  
Spurge, prostrate  
Woodsorrel, yellow

### Scientific Name

Senecio vulgaris  
Euphorbia humistrata  
Oxalis stricta

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

Quali-Pro Oryzalin 4 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 weed control.

### **Broadcast Application Rates (Warm Season Turfgrasses)**

Use Area	Quali-Pro Oryzalin 4 (qt/acre)	Quali-Pro Oryzalin 4 (fl oz/1000 sq ft)	Minimum Time Between Applications (Months)	Total Amount Allowed Per Year (qt/acre)
All except Florida	1.5 to 2	1.5 to 1	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 Quali-Pro Oryzalin 4 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, Quali-Pro Oryzalin 4 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 Quali-Pro Oryzalin 4 in 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 Quali-Pro Oryzalin 4.

## **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 Quali-Pro Oryzalin 4 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 Quali-Pro Oryzalin 4 at 1.5 quarts per acre. If thinning of turfgrasses cover is not a potential problem, Quali-Pro Oryzalin 4 may be applied at 2 quarts per acre.

### **Weed Control in Florida**

In Florida, apply 1.5 quarts per acre of Quali-Pro Oryzalin 4 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 Quali-Pro Oryzalin 4 in any single application.

### **Application Equipment**

Apply Quali-Pro Oryzalin 4 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 Quali-Pro Oryzalin 4. 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 Quali-Pro Oryzalin 4, the seeding rate should be increased and equipment

designed to place seed in full contact with soil (such as the Rogers Aero Seeder) should be employed.

### **Special Use Precautions**

To avoid possible injury, do not apply Quali-Pro Oryzalin 4 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. Augustine-grass, 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.

### **IMPORTANT INFORMATION. READ BEFORE USING PRODUCT.**

**IMPORTANT:** Read the information below before using this product. If the terms are not acceptable, you should return the unopened product container immediately for a complete refund.

# 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  $\frac{1}{4}$  full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Then offer for recycling or reconditioning, 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  $\frac{1}{4}$  full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip 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.

## 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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