

# **Prodiamine** 4L Herbicide

A selective preemergence herbicide for control of grass and broadleaf weeds in established turfgrasses (excluding golf course putting greens), lawns and sod nurseries, ornamentals, and Christmas tree farms

ACTIVE INGREDIENT:	% BY WT.
Prodiamine*:	
OTHER INGREDIENTS:	<u>59.2%</u>
TOTAL:	
Contains 4 pounds prodiamine per gallon	
*CAS No. 29091-21-2	

EPA Reg. No. 66222-230

EPA Est. No. 37429-GA-001<sup>BT</sup>; 37429-GA-002<sup>BO</sup> Letter(s) in lot number correspond(s) to superscript in EPA Est. No.

## KEEP OUT OF REACH OF CHILDREN CAUTION

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

CAUTION: May be harmful if swallowed, absorbed through skin, or inhaled. Avoid breathing vapor. Avoid contact with skin, eyes, or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash clothing before reuse.

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

## Net Contents: 2.5 Gallons



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EPA 040711/Notif 061011/Rev A

FIRST AID		
IF SWALLOWED:	<ul> <li>Call a poison control center or doctor immediately for treatment advice.</li> <li>Have person sip a glass of water if able to swallow.</li> <li>Do not induce vomiting unless told to do so by a poison control center or doctor.</li> <li>Do not give anything by mouth to an unconscious or convulsing person.</li> </ul>	
IF IN EYES:	<ul> <li>Hold eye open and rinse slowly and gently with water for 15 to 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>	
IF INHALED:	<ul> <li>Move person to fresh air.</li> <li>If person is not breathing, call 911 or an ambulance; then give artificial respiration, preferably mouth-to-mouth if possible.</li> <li>Call a poison control center or doctor for further treatment advice.</li> </ul>	
IF ON SKIN OR CLOTHING:	<ul> <li>Take off contaminated clothing.</li> <li>Rinse skin immediately with plenty of water for 15 to 20 minutes.</li> <li>Call a poison control center or doctor for treat- ment advice.</li> </ul>	
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact Prosar at 1-877-250-9291 for emergency med- ical treatment information.		

#### PERSONAL PROTECTIVE EQUIPMENT (PPE)

#### WPS USES

Applicators, mixers, loaders, and other handlers who handle this pesticide for any use covered by the Worker Protection Standard (40 CFR Part 170) - agricultural plant uses are covered - must wear: • Lono-sleeved shirt and long pants

Shoes plus socks

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.

**IMPORTANT**: When reduced PPE is worn because a closed system is being used, handlers must be provided with all of the PPE specified above for applicators and other handlers, and have such PPE immediately available for use in an emergency, such as a spill or equipment breakdown.

#### USER SAFETY RECOMMENDATIONS

#### Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- After handling this product, immediately remove PPE, wash yourself thoroughly, and change into clean clothing.

#### ENVIRONMENTAL HAZARDS

This product has low solubility in water. At the limit of solubility, this product is not toxic to fish. However, at concentrations substantially above the level of water solubility, it may be 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. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent sites. Do not contaminate water when disposing of equipment washwater.

#### DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

#### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170.

This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restrictedentry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours. 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.

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 such as butyl rubber ≥ 14 mils, natural rub-
- ber  $\geq$  14 mils, neoprene rubber  $\geq$  14 mils, or nitrile rubber  $\geq$  14 mils • Shoes plus socks

#### NON-AGRICULTURAL USE REQUIREMENTS

The requirements of 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, or nurseries.

Applicators and handlers should wear:

- Long-sleeved shirt
- Long pants
- Chemical-resistant gloves
- Shoes with socks
- Protective eyewear

Thoroughly wash face and hands with soap and water after exposure and before eating or smoking. Launder exposed clothing before reuse. Do not allow reentry to treated areas until dust has settled and the turf grass or soil is dry.

#### PRODUCT INFORMATION

#### Formulation and Mode of Action

Quali-Pro® Prodiamine 4L is a liquid herbicide containing the active ingredient prodiamine, a member of the dinitroaniline family of herbicides. Each gallon contains 4 pounds active ingredient. Quali-Pro Prodiamine 4L is used for pre-emergent control of grasses and broadleaf weeds. The active ingredient inhibits mitotic processes in plants and controls susceptible weeds by preventing growth and development of newly germinated weeds. Weed control is most effective when Quali-Pro Prodiamine 4L is activated by at least 0.5 inches of rainfall or irrigation or shallow incorporation (1 to 2 inches for non-turf applications) before weed seeds germinate and within 14 days following application.

#### Uses and Application

Apply Quali-Pro Prodiamine 4L for selective preemergence control of many grass and broadleaf weeds in the following areas: 1) established turfgrasses (excluding golf course putting greens); 2) lawns and sod nurseries; 3) container, field-grown, and landscape ornamentals; 4) established perennial and wildflower plantings; and 5) Christmas tree farms.

Apply Quali-Pro Prodiamine 4L in a minimum of 20 gallons/acre (0.5 gallons /1000 sq ft) of carrier (water and/or fluid fertilizer) using a calibrated, low-pressure sprayer with 50-mesh or coarser screens. A broadcast boom or handheld wand designed for herbicide or insecticide application will provide the best results. Select nozzle pressure and gallonage to provide complete coverage.

#### New Plantings, Replanting, and Rotational Plantings

Rotate nursery or landscape areas treated with Quali-Pro Prodiamine 4L only to ornamental species listed on this label for 1 (one) year following application unless the following test has shown species safety:

Before planting a species not listed on this label, sow several test strips
of an indicator plant such as wheat, sorghum, or corn into the treated
area. If the indicator plants germinate and grow normally to a height of
12 inches with normal root development, it is safe to plant.

In areas disturbed by new plantings or replanting of labeled species, it may be necessary to re-treat exposed soil to maintain satisfactory weed control, but do not apply more than 48 fl oz/acre per year.

#### MIXING QUALI-PRO PRODIAMINE 4L

#### When Used Alone

Mix Quali-Pro Prodiamine 4L thoroughly in the spray tank to ensure uniform application. Steps to follow when mixing Quali-Pro Prodiamine 4L include:

- 1. Filling the spray tank 1/4 full with clean water only;
- Starting the agitation system and checking to ensure it is working properly;
- Maintaining vigorous agitation in the spray tank before and during the application to ensure a well-mixed spray suspension;
- Adding a spray colorant with Quali-Pro Prodiamine 4L to mark treated areas and improve application accuracy by minimizing swath skips and overlaps; and
- After use, thoroughly clean the sprayer by flushing the system with water containing a detergent.

Refer to the **PESTICIDE DISPOSAL** section of this label for waste disposal. Do not allow spray suspension to dry in the tank. If Quali-Pro Prodiamine 4L was mixed with fertilizer instead of water in the spray tank, the fertilizer aids in re-suspension of Quali-Pro Prodiamine 4L if agitation is disrupted. However, use the entire tank before stopping agitation.

#### When Used in Tank Mixtures

Quali-Pro Prodiamine 4L can be applied in tank mixtures with certain other EPA-registered herbicides to provide a broader spectrum of weed control and/or to control emerged weeds. Refer to the specific directions for use for tank mix partners, and refer to the label(s) of the individual tank mix partner(s) for use rate, application timing, weeds controlled, and specific precautions and/or restrictions. Tank mixes are permitted only in states where the tank mix partner(s) are registered for the application site and the turf and ornamental species listed. When using Quali-Pro Prodiamine 4L in a tank mixture with other pesticides, follow restrictions and precautions on the labels of the products used.

When mixing Quali-Pro Prodiamine 4L with other components (carrier and partner pesticide products), allow products to completely dissolve between steps and be sure to maintain agitation throughout mixing and application. When products are to be tank mixed with Quali-Pro Prodiamine 4L, add them to the spray tank in the following order:

- Products packaged in water-soluble bags: Agitate the tank mixture. Allow the water-soluble bags to completely dissolve and the products to disperse before adding any other tank mix partners.
- Water-dispersible granules (WDG or WG formulations) and wettable powders (WP formulations): Add wettable powders to the tank as agitation continues. Allow the product to disperse completely before other products are added.
- Spray adjuvants and spray markers: Read the adjuvant's label first and use only those adjuvants approved for application to turf and ornamentals.
- Quali-Pro Prodiamine 4L, other flowable liquids (FL), or suspension concentrates (SC) must be added next.
- 5. Add emulsifiable concentrates (EC) last.

#### **Compatibility Testing**

Before mixing Quali-Pro Prodiamine 4L with other pesticides in the spray tank, test for compatibility by mixing all components (carrier and pesticide products) in an appropriate container in proportionate quantities. For example, 1 quart would be 1/100 the volume of a 25 gallons/acre spray rate. At 1.0 pound/acre, the Quali-Pro Prodiamine 4L rate would be approximately 1 teaspoon to a quart of water (see **Table 1**).

Table 1. Amount of Component to Add to One Quart of Spray Car-	
rier (Using Carrier Volume of 25 gallons/acre)	

Component Formulations	Rate Per		Level
	Acre	1000 sq ft	Teaspoons
Quali-Pro Prodiamine 4L	21.0 fl oz	0.5 fl oz	1.0
Dry Tank Mix Partners	1.0 lb	0.4 oz	1.5
Liquid Tank Mix Partners	16 fl oz	0.4 fl oz	0.5

If components do not ball-up or form flakes, sludge, gels, oily films, or layers, then the mixture is compatible. Let the mixture stand for 15 minutes. Incompatibility will usually occur within 5 minutes after mixing. If components are not compatible, use a compatibility agent and rerun the test to determine if the mixture is suitable. If the components are still not compatible, do not tank mix.

#### PRODUCT USE PRECAUTIONS

- Do not graze or feed livestock forage cut from areas treated with Quali-Pro Prodiamine 4L.
- 2. Do not apply Quali-Pro Prodiamine 4L to plants that will be consumed for food use.
- Follow all applicable directions, restrictions, and precautions on the labels of EPA-registered tank mix partners.
- Do not blend Quali-Pro Prodiamine 4L onto dry fertilizer or any other granular material.
- Chemigation: Do not apply this product through any type of irrigation system unless instructed otherwise in this label.
- 6. Do not apply aerially.
- 7. Do not apply to golf course putting greens.
- Follow all use directions in this label. In all cases, do not exceed a dosage of 1.5 pounds active/acre (48 fl oz/acre) per year on any use site.

#### WEEDS CONTROLLED IN ESTABLISHED TURF AND ORNAMENTALS

When used as directed in this label for established turf and container, field-grown, and landscape ornamental plantings including Christmas tree farms, Quali-Pro Prodiamine 4L will control the grass and broadleaf weeds listed in **Table 2**.

#### Table 2. Weeds Controlled by Quali-Pro Prodiamine 4L in Established Turf, Container, Field-Grown, and Landscape Ornamental Plantings Including Christmas Tree Farms

#### Common Name

Barnyardgrass Betony, Florida\* Bluegrass, Annual1 Carpetweed Chickweed, Common<sup>2</sup> Chickweed, Mouseear (from seed) Craborass, Large<sup>3</sup> Crabgrass, Smooth<sup>3</sup> Crowfootgrass Cupgrass, Woolly Foxtails, Annual Goosegrass<sup>5</sup> Henbit<sup>2</sup> Itcharass Jew. Wandering<sup>4\*</sup> Johnsongrass (from seed) Junglerice

#### Scientific Name

Echinochloa crus-galli Stachvs flordans Poa annua Mollugo verticillata Stellaria media Cerastium vulgatum Digitaria sanguinalis Digitaria ischaemum Dactyloctenum aegypticum Eriochloa villosa Setaria spp. Eleusine indica Lamium amplexicaule Rottboellia cochinchinensis Zebrian pendual Sorghum halepense Echinochloa colonum

Knotweed<sup>2</sup> Kochia Lambsquarters, Common Lovegrass Oxalis, Buttercup\* Panicum, Texas Panicum, Fall Panicum, Browntop Piaweed Purslane, Common Puslev. Florida Rescuegrass<sup>4</sup> Shepherdspurse<sup>2</sup> Signalgrass, Broadleaf Speedwell, Persian Sprangletop Spurge, Prostrate Vetch, Common\* Witchgrass Woodsorrel, Yellow (from seed)

Polygonum spp. Kochia scoparia Chenopodium album Eragrostis spp. Oxalis pes-caprae Panicum texanum Panicum dichotomiflorum Panicum fasciculatum Amaranthus spp. Portulaca oleracea Richardia scabra Bromus catharticus Capsella bursa-pastoris Brachiaria platyphylla Veronica persica Leptochloa spp. Chamaesyce humistrata Vicia sativa Panicum capillare Oxalis stricta

#### \*Not for Use in California.

<sup>1</sup>In those areas where *Poa annua* is a winter annual, apply Quali-Pro Prodiamine 4L in August or September to established, non-overseeded turf before *Poa annua* seeds germinate (see **Table 4** for maximum use rates). These timings are approximate. Consult State Extension Service for more specific timing for your area. Also see the section of this label *Poa annua* **Control in Established Bermudagrass Overseeded with Perennial Ryegrass (AZ, CA, NV, and TX Only).** 

<sup>2</sup>To control this weed, apply Quali-Pro Prodiamine 4L in late summer, fall, or winter before weeds germinate.

<sup>a</sup>Fall Applications for Spring Crabgrass Control in Cool-Season Grasses: In those areas where the ground freezes in the winter, Quali-Pro Prodiamine 4L can be applied in the fall at rates of 21-24 fl oz/acre after soil temperatures fall below 50°F, but before the ground freezes. This application will control crabgrass the following spring. <sup>4</sup>Suppression only.

<sup>6</sup>In many areas a single application of 21-48 fl oz/acre of Quali-Pro Prodiamine 4L will control goosegrass. However, under heavy goosegrass pressure and/or an extended growing season, weed control will be most effective by making an initial application of 21-26 fl oz/acre followed by a second application 60-90 days later. **Note: Do not exceed** the maximum rate for the turf species listed in **Table 4 (Maximum Application Rate of Quali-Pro Prodiamine 4L per Calendar Year by Turf Species)**.

#### SPECIFIC USE DIRECTIONS - ESTABLISHED TURF Product Information

Quali-Pro Prodiamine 4L is a selective preemergence herbicide that, when properly applied, will control certain grass and broadleaf weeds in established turfgrasses including golf courses (excluding putting greens), lawns, and sod nurseries. The maximum amount of Quali-Pro Prodiamine 4L that can be applied per year is given for each turfgrass species in **Table 4** of this label.

For optimum weed control, activate Quali-Pro Prodiamine 4L with at least 0.5 inches of rainfall or irrigation before weed seeds germinate and within 14 days following application. See the map below for approximate crabgrass seed germination dates.

#### Crabgrass Seed Germination Dates

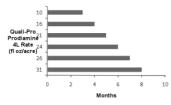


#### Timing and Method of Application to Turfgrass

Apply Quali-Pro Prodiamine 4L as a single application or in sequential applications to control weeds germinating throughout the year. All applications must be made before target weeds germinate because Quali-Pro Prodiamine 4L will not control weeds that have already emerged. Apply Quali-Pro Prodiamine 4L in a minimum of 20 gallons/acre (0.5 gallons/1000 sq ft) of carrier (water and/or fluid fertilizer) using a calibrated, low-pressure sprayer with 50-mesh or coarser screens. A broadcast boom or handheld wand designed for herbicide or insecticide application will provide the best results. Select nozzle pressure and gallonage to provide complete coverage.

The amount of Quali-Pro Prodiamine 4L to apply depends upon the length of residual weed control desired (the higher the application rate, the longer the control), the turf species, and the maximum amount which can be applied to the turf species per calendar year. Specific information is provided in **Table 3** and **Table 4**.

#### Table 3. Length of Crabgrass Control\* With Quali-Pro Prodiamine 4L



\*Length of control varies by region. This table is an average.

#### Dosage

Quali-Pro Prodiamine 4L can be safely applied to the turfgrass species listed in **Table 4**. Do not exceed the highest rate listed for each species in a calendar year, as injury can occur.

## Table 4. Maximum Application Rate of Quali-Pro Prodiamine 4L per Calendar Year by Turf Species

Turf Species	FI Oz Product/Acre <sup>1</sup>	FI Oz Product/1000 sq ft1
Bermudagrass <sup>2</sup> Bahiagrass Centipedegrass Kikuyugrass Seashore Paspalum St. Augustinegrass <sup>3</sup> Tall Fescue (includ- ing turf-type) Zoysiagrass	21-48	0.5-1.1
Buffalograss Kentucky Bluegrass Perennial Ryegrass	10-30	0.23-0.70
Fine Fescue	10-24	0.23-0.55
Creeping Bentgrass (0.5 inch or more in height <sup>4</sup> )	10-21	0.23-0.48

<sup>1</sup>Quali-Pro Prodiamine 4L can be applied more than once a year as long as the total amount applied is not greater than the maximum application rate for each turf species. All applications must be made before weed seeds germinate.

<sup>2</sup>Quali-Pro Prodiamine 4L can be used on newly sprigged or plugged bermudagrass at rates not to exceed 17 fl oz/acre (0.39 fl oz/1000 sq ft). Newly sprigged or plugged bermudagrass stolon rooting can be temporarily inhibited.

<sup>3</sup>Use an initial rate of 16-32 fl oz/acre per application.

<sup>4</sup>To avoid grass injury, do not apply Quali-Pro Prodiamine 4L to creeping bentgrass mowed at less than 0.5 inch in height.

#### When to Apply Quali-Pro Prodiamine 4L after Overseeding Turf

Injury to desirable seedlings is likely if Quali-Pro Prodiamine 4L is applied before the secondary roots of seedlings are in the second inch of soil, not thatch plus soil. To reduce the potential to injure overseeded turf, wait 60 days after seeding or until after the second mowing, whichever is longer, before applying Quali-Pro Prodiamine 4L.

#### When to Overseed After Application - All States

Quali-Pro Prodiamine 4L will inhibit the development of turfgrass species overseeded too soon after application. Follow rates and intervals in **Table 5** for best overseeding/reseeding results.

Amount of Quali-Pro Prodiamine 4L	Interval (Months Before Overseeding)*		
FI Oz Product/Acre	North	Transition	South
16	4	4	4
21	5	4	4
24	6	5	5
26	-	6	6
31	_	7	7
36	_	—	9
42	_	_	10
48	_	—	12

Table 5. Waiting Interval before Overseeding Perennial Ryegrass Following Application of Quali-Pro Prodiamine 4L

\* In AZ, CA, NV, and TX, the overseeding interval can be shorter in

established bermudagrass that has been overseeded with perennial ryegrass. See the next section for additional information.

Poa Annua Control in Established Bermudagrass Overseeded with Perennial Ryegrass (AZ, CA, NV, and TX only) Use on golf courses (excluding golf course putting greens), lawns, and sod nurseries when overseeding with perennial rye grass. (Minimum seeding rate of 350 lbs/acre).

#### Table 6. Amount of Quali-Pro Prodiamine 4L to Apply to Bermudagrass Overseeded with Perennial Ryegrass

Amount	When to	Expected	Use Precautions
to Apply	Apply	Control	
12-21 fl oz/acre*	6-8 weeks before rye- grass over- seeding Second application: 4-8 weeks after over- seeding or when peren- nial ryegrass roots are in the second inch of soil	1 application for 70% or greater con- trol of <i>Poa</i> <i>annua</i> Second application can enhance control	<ul> <li>Some seedling mortality and temporary reduction in root growth of new seedlings can occur.</li> <li>To reduce the potential for seedling mortality, main- tain a moist seedbed with light, frequent irrigation.</li> <li>Make no more than 2 appli- cations per year for this use, and do not exceed a total of 27 fl oz/acre (0.85 pounds active/acre) per year.</li> <li>Do not make a second application if any injury to the ryegrass is observed after the first application.</li> <li>Do not make a second application unless the product was first applied before overseeding.</li> </ul>

\*The amount of Quali-Pro Prodiamine 4L to apply depends upon: the length of residual control desired (the higher the application rate, the longer the control). **Note:** The higher the rate, the greater the potential for seedling mortality.

### Use Precautions - Turfgrass: Golf Courses (excluding golf course putting greens), Lawns, and Sod Nurseries

- Do not apply Quali-Pro Prodiamine 4L to areas where dichondra, colonial bentgrass, velvet bentgrass, or annual bluegrass (*Poa annua*) are desirable species.
- Do not cut (harvest) treated sod before 90 days after application. To avoid turfgrass injury, do not apply to newly set sod until the sod has rooted and exposed edges have filled in.
- To avoid turfgrass injury, do not apply Quali-Pro Prodiamine 4L to turf stressed by conditions such as drought, low fertility, or pest damage.
- Disturbing the herbicide barrier with cultural practices such as disking can result in reduced weed control.
- 5. Do not apply Quali-Pro Prodiamine 4L to golf course putting greens.
- 6. If the depth of the creeping bentgrass root system becomes shallow and root tips contact prodiamine-treated soil, new root formation can be inhibited. Mowing height can affect the depth of a plant's root system. To avoid this, do not apply Quali-Pro Prodiamine 4L to creeping bentgrass less than 0.5 inches in height.

#### CONTAINER, FIELD-GROWN, AND LANDSCAPE ORNAMENTAL PLANTINGS INCLUDING CHRISTMAS TREE FARMS

#### Product Information

Apply Quali-Pro Prodiamine 4L to soil surfaces for preemergence control of many grass and broadleaf weeds around ornamental shrubs and trees, established perennial vegetation and wildflower plantings, and Christmas tree farms. (See **Table 2** for a list of weeds controlled).

#### **Timing and Method of Application**

Quali-Pro Prodiamine 4L is a preemergence herbicide only and will not control emerged grass or broadleaf weeds. It works best when applied to soil that is free of clods, weeds, and debris and is activated by at least 0.5 inches of irrigation or rainfall or shallow incorporation to a depth of 1 to 2 inches. Weed control is improved if Quali-Pro Prodiamine 4L is activated in the soil before weed seeds germinate and within 14 days after application. Apply Quali-Pro Prodiamine 4L to newly transplanted and established ornamentals as a broadcast or over-the-top spray.

#### **Crop Tolerance**

Direct application of Quali-Pro Prodiamine 4L to rapidly growing tissue or buds can injure desirable plants. In the spring when buds are rapidly growing and expanding, over-the-top application of Quali-Pro Prodiamine 4L can injure new growth of desirable plants; however, these effects are temporary. To reduce the possibility of injury at this time, wait to apply Quali-Pro Prodiamine 4L over the top of newly emerged vegetation until it has hardened off, unless your experience indicates that the ornamental plant will not be injured by the over-the-top application. After application, immediately apply overhead irrigation to the foliage to wash Quali-Pro Prodiamine 4L from plant surfaces onto soil (watering the foliage of plants before application can improve the washing process).

Table 7. Amount of Quali-Pro Prodiamine 4L to Apply to Container, Field-Grown, and Landscape Ornamental Plantings and Christmas Trees Farms

Amount to Apply (Broadcast)*	When to Apply	Comments/Instructions
21-48 fl oz/acre or 0.5-1.1 fl oz/ 1000 sq ft	In fall or spring before weeds germinate or after weeds are removed.	<ul> <li>Use the higher rate for longer control.</li> <li>Quali-Pro Prodiamine 4L can be applied more than once per year as long as the total amount of product applied does not exceed 48 fl oz/acre (1.5 pounds active/acre) per year.</li> </ul>

\*NOTE: For band application, calculate amount per acre:

Band width in inches x broadcast rate = amount to apply/acre of field Row width in inches

#### Table 8. Equivalent Measurements for Quali-Pro Prodiamine 4L

FI Oz/Acre	FI Oz/1000 sq ft	Approximate Equivalent — Tablespoons/1000 sq ft
21	0.5	1.0
31	0.7	1.5
42	1.0	2.0
48	1.1	2.25

#### Table 9. Application Sites and Instructions for Quali-Pro Prodiamine 4L Use on Container, Field-Grown, and Landscape Ornamental Plantings, and Christmas Tree Farms

Site	Application Instructions
Newly Transplanted	<ul> <li>Delay application until soil has settled</li> </ul>
Container or Field	around transplants.
Nursery Stock	<ul> <li>Water transplants thoroughly before applica- tion.</li> </ul>
	<ul> <li>Apply after cuttings form roots and are established.</li> </ul>
	<ul> <li>To avoid inhibition of the tissue union, apply before budding/grafting or after buds/grafts have taken.</li> </ul>
Established Container,	<ul> <li>Apply at any time as a broadcast, over-the-</li> </ul>
Field Nursery Stock, or Landscape Plants	top, or directed spray.
Landscape (or Orna-	Apply as a broadcast, over-the-top, or as a
mental) Plantings	directed spray.
	<ul> <li>Delay applications to newly transplanted ornamentals until soil has settled around transplants.</li> </ul>
Bare Ground Applica- tion for Container Placement	<ul> <li>Apply to soil (including mulch, gravel, wood chips, or other permeable base) upon which containerized ornamentals are placed.</li> <li>After Quali-Pro Prodiamine 4L is applied, perform shallow cultivation or hand weeding only to avoid disturbing the herbicide barrier.</li> </ul>
In Shadehouses and	<ul> <li>After Quali-Pro Prodiamine 4L is applied,</li> </ul>
Uncovered Poly- houses	uncovered polyhouses must remain open for at least 7 days and ornamentals must receive 2 irrigations totaling at least 0.5 inches of water before covering.
Ornamental Bulbs and	
Perennial Wildflower	bulbs or perennial wildflower species listed
Plantings	in Table 11. Tolerant Ornamental Species
	section. Apply before or after bulbs emerge but before bulbs bloom and weeds emerge.
	<ul> <li>In wildflowers, a postemergence herbicide</li> </ul>
	labeled for wildflowers may be needed to
	control weeds that have already emerged.

## Tank Mixtures for Use on Container, Field-Grown, and Landscape Ornamentals, and Christmas Tree Farms

Tank mix Quali-Pro Prodiamine 4L with other registered herbicides listed on this label to provide a broader spectrum of weed control or to control emerged weeds. Tank mixes with Quali-Pro Prodiamine 4L are for use only in states where the tank mix partner(s), application site, and intended use pattern are registered.

Follow the label directions of the tank mix partner(s) for application rates, timing, weeds controlled, tolerant ornamentals, and specific use precautions and/or restrictions. Before combining a tank mix partner in the spray tank, test for compatibility as described in the **Compatibility Testing** section of this label.

#### Table 10. Tank Mix Partners for Quali-Pro Prodiamine 4L Use on Container, Field-Grown, and Landscape Ornamental Plantings, and Christmas Tree Farms

Product	Precautions/Instructions
Galigan <sup>®</sup> 2E, (use on conifers only)	<ul> <li>Mix with Quali-Pro Prodiamine 4L for post- emergence control of certain broadleaf weeds including malva and filaree.</li> </ul>
Quali-Pro Isoxaben 75 WG <sup>®</sup> , Princep <sup>®</sup> , MANA Parallel	<ul> <li>See product labels for weed spectrum and tol- erant ornamentals.</li> </ul>
Glyphogan® (or other glyphosate- based products) and Finale®	<ul> <li>These nonselective tank mix herbicides control many emerged annual broadleaves and grasses.</li> <li>Take extreme care to prevent tank mixtures with these partner products from contacting the foliage and stems of turfgrass, trees, shrubs, or other desirable vegetation because desirable vegeta- tion could be severely injured or killed. Apply these tank mixtures as a directed spray and use a shield to prevent spray from contacting foliage of desirable plants.</li> <li>Following instructions on the tank mix partner's label, delay irrigation of the treated area to allow time for the herbicide to be absorbed by weed foliage.</li> </ul>

#### **Tolerant Ornamental Species**

Quali-Pro Prodiamine 4L will not harm trees, shrubs, vines, and flowers. The species listed below in **Table 11** are tolerant to Quali-Pro Prodiamine 4L. Quali-Pro Prodiamine 4L can be used for application to these species. Quali-Pro Prodiamine 4L can be applied over the top of the listed species. The species that are not tolerant to Quali-Pro Prodiamine 4L when grown in containers are indicated.

When plants are under stress (such as heat, drought, or frost damage), some cultivars of listed plants may be sensitive to Quali-Pro Prodiamine 4L.

#### Table 11. Tolerant Ornamental Species

Scientific name Abelia grandiflora <sup>†</sup> Abies spp. Acer palmatum Acer platanoides Achildia espp. <sup>†</sup> Actinidia chinensis <sup>*</sup> Agapanthus africanus Agapanthus arientalis <sup>†</sup> Akebia quintata <sup>†</sup> Allium cernuum <sup>†</sup> Anemone hybrida <sup>†</sup> Aquilegia spp. <sup>†</sup> Arctotheca calendula Aucuba japonica Artemisia spp. <sup>†</sup> Aster spp. <sup>†</sup> Aster spp. <sup>†</sup> Aster spp. <sup>†</sup>	Common name Abelia: Sherwood Fir species** (Balsam, Fraser, Noble, etc.) Japanese Maple Norway Maple Yarrow: King Edward Kiwi* Lily-of-the-Nile (African Lily) Five-Leaf or Chocolate Vine Lady's Leek, Nodding Onion Japanese Anemone Columbine Vine Hill Manzanita Cape Weed Japanese Aucuba Wornwood; Silver Mound, Castle Aster: Bonny Blue, Purple Dome Lady Fern Fibrous Begonia: Hardy Grandis
Begonia spp.† Berberis gladwynensis	

#### Scientific name

Berberis iulianae Berberis mentorensis Berberis thunbergii Berberis verruculosa Bergenia cordifolia<sup>†</sup> Boltonia asteroides<sup>†</sup> Bougainvillea spp.<sup>†</sup> Ruddleia davidii † Buxus microphylla Callistemon citrinus<sup>†</sup> Callistemon viminalis Calluna vulgaris Campanula carpatica<sup>†</sup> Campis X tagliabuana<sup>†</sup> Carpobrotus edulis Cassia artemisioides Ceanothus rigidus Ceratostigma plumbaginoides<sup>†</sup> Chamaecyparis pisifera Chrvsanthemum nipponicum<sup>†</sup> Clevera japonica Citrus spp.\* Coreopsis spp.<sup>†</sup> Cornus florida Cornus stolonifera Cortaderia selloana Cotoneaster apiculatus Cotoneaster buxifolius Cotoneaster dammeri Cotoneaster microphyllus Crataegus spp. Cupressus sempervirens Crocosmia spp.<sup>†</sup> Delosperma alba Delphinium spp.<sup>1</sup> Dianthus deltoidia<sup>†</sup> Dianthus gratianopolitanus<sup>†</sup> Dodonea viscosa Echinacea purpurea<sup>†</sup> Elaeagnus pungens Euonymus fortunei Euonymus japonica Euonymus kiautschovicka Fatsia japonica Forsythia intermedia Forsythia suspensa<sup>†</sup> Forsythia viridissima Gaillardia spp.<sup>†</sup> Gardenia iasminoides Gaura spp.<sup>†</sup> Gentiana dahurica<sup>†</sup> Geranium cinereum<sup>†</sup> Gladiolus spp.\*\* Gypsophila repenst Hedera helix Helianthemum spp.<sup>†</sup> Hemerocallis spp.<sup>†</sup> Heucherella spp.<sup>†</sup> Hibiscus\*\* Hibiscus Rosa-sinensis\*\*

#### Common name

Wintergreen Barberry Mentor Barberry Japanese Barberry Warty Barberry

Snowbank Bougainvillea Butterfly-Bush (Dwarf Blue); Royal Red Japanese Boxwood Crimson Bottlebrush Weeping Bottlebrush Scotch Heather Tusscok Bellfower; (White Clips) Trumpet Creeper, Trumpet Flower; Madame Galen Hottentot Fig (Ice Plant) Feathery Cassia Wild Lilac

False Cypress

Clevera Citrus species\* Coreopsis (Calliopsis): Early Sunrise, Moonbeam Dogwood (Flowering & American) American Dogwood Pampas Grass Cranberry Cotoneaster Cotoneaster Bearberry Cotoneaster Rockspray Cotoneaster Hawthorne Italian Cypress Lucifer Ice Plant Larkspur: Blue Elf Dianthus, Maiden Pinks 'Zing' Cheddar Pink Hop Bush Coneflower, Purple; Magnus Silverberry Wintercreeper Japanese Spindle Tree (Evergreen Euonymus) Spreading Euonymus Japanese Aralia Border Forsythia Weeping Forsythia Greenstem Forsythia Gaillardia, Blanket Flower: 'Goblin' Gardenia, Cape-Jasmine Guara Gentian Craneshill Gladiolus species\*\* Baby's Breath English Ivv Sunrose Davlily: Aztec Gold. Stella De Oro. Tender Love Coral Bell: Bridget Bloom Rose of Sharon\*\* Chinese Hibiscus\*\*

#### Scientific name

Hosta plantaginea<sup>†</sup> Hosta sieboldiana<sup>†</sup> Houttuynia cordata var. variegata<sup>†</sup> Hydrangea macrophylla<sup>†</sup> llex cornuta\*\* llex crenata llex opaca llex pernvi llex vomitoria Iris spp.\*\* Jasminium nudiflorum Juglans spp.\* Juniperus chinensis Juniperus conferta Juniperus davuricae<sup>†</sup> Juniperus horizontalis Justicia brandegeana Lagerstromia indica Lagerstromia indica and hybrids<sup>†</sup> Lantana montevidensis† Lavender spp.<sup>†</sup> Leontopodium alpinum<sup>†</sup> Ligustrum amurense Ligustrum japonicum Liaustrum lucidum Liaustrum sinense<sup>†</sup> Lilium spp.<sup>†</sup> Liriope muscari Liriope spicata<sup>†</sup> Lobelia cardinalis<sup>†</sup> Lonicera iaponica Lonicera tatarica Loropetalum chinense<sup>†</sup> Lythrum spp.<sup>†</sup> Magnolia spp.\*\* Maleophora luteola Malus spp.\* Miscanthus sinensis\*\*\* Nandina domestica Narcissus spp.\*\* Nerium spp. Oenothera missourensis<sup>†</sup> Olea europaea\* Ophiopogon iaponicus\*\* Osmanthus heterophyllus<sup>†</sup> Osteospermum fruticosum Oxydendrum arboreum Paeonia suffruticosa Pennisetum setaceum\*\*† Perovskia atriplicifolia<sup>†</sup> Persea americana\* Photinia fraseri Physostegia virginiana<sup>†</sup> Picea spp. \*\* Pieris iaponica Pinus brutia Pinus canariensis Pinus elliottii Pinus halepensis Pinus nigra

#### Common name

Hosta, Plantain Lily (Fragrant) Hosta, 'Seersucker'

Bigleaf Hydrangea Chinese Holly\*\* Japanese Holly American Holly Holly Yaupon Holly Iris species\*\* Winter Jasmine Walnut\* Chinese Juniper Shore Juniper Parsoni Creeping Juniper Shrimp Plant Crape Myrtle Crape Myrtle Weeping Lantana Lavender: Munstead Edelweiss Amur Privet Japanese Privet Glossy Privet (Wax-Leaf) Chinese Privet Lilv Liriope; Big Blue Lillyturf Liriope, Creeping Cardinal Flower, Indian Pink Japanese Honevsuckle Tatarian Honeysuckle Loropetalum: Burgundy Loosestrife; Modern Pink Magnolia species\*\* Ice Plant Crabapple\* Yaku Jima\*\*. Silberfeder\*\* Heavenly Bamboo Narcissus species\*\* Oleander Evening Primrose Olive\* Mondo Grass\*\* Osmanthus (False Holly): Gulf Tide Trailing African Daisy Sourwood Tree Peony Fountain Grass (Dwarf)\*\* Avocado\* Frasier's Photinia (Redtip)

Frasier's Photinia (Reditp) Dragonhead, False; Vivid Spruce species" (Colorado Blue, Norway, etc.) Japanese Andromeda; Lily-of-the-Valley Shrub Calabrian Pine Canary, Island Pine Slash Pine Aleppo Pine Austrian Black Pine

#### Scientific name

Pinus palustrus Pinus radiata Pinus strobus Pinus svlvestris Pinus taeda Pinus thunbergiana Pinus virginiana Pistacia spp.\* Pittosporum rhombifolium Pittosporum tobira Podocarpus macrophyllus Prunus laurocerasus Prunus spp.\* Pseudotsuga menziesii\*\* Pvracantha coccinea Pvracantha fortuneana Pvracantha koidzumii Pvrus spp. Quercus rubra Quercus shumardii † Raphiolepsis indica Raphiolepsis umbellata<sup>†</sup> Rhododendron spp.<sup>†</sup> Rosa banksiae Rudbeckia spn † Rumohra adiantiformis Santolina virens Saxifraga spp.<sup>†</sup> Scabiosa spp.<sup>†</sup> Sedum album Spiraea humalda<sup>†</sup> Syzygium paniculatum Taxus cuspidata . Taxus media Teucrium spp.<sup>†</sup> Thalictrum dipterocarpum<sup>†</sup> Thuia occidentalis Trachelospermum asiatum Tsuga canadensis Tulipa spp. Veronica spp.<sup>†</sup> Viburnum iaponicum Viburnum odoratissimum Viburnum plicatum Viburnum rigidum Viburnum iaponicum Viburnum suspensum<sup>†</sup> Viburnum tinus Viburnum trilobium Viburnum wriahtii Vinca major Vinca minor Vitis spp.\* Weigela florida Yucca aloifolia Yucca filamentosa

Common name Longleaf Pine Monterev Pine Eastern White Pine Scotch Pine Loblolly Pine Japanese Black Pine Virginia Pine Pistachio\* Queensland Pittosporum Japanese Pittosporum Japanese Yew English Laurel Almond, Apricot, Nectarine, Peach, Plum, and Prune\* Douglas Fir\*\* Firethorn Scarlet Firethorn Firethorn Pear spp. including Bradford Oak species Oak. Shumard's Red Indian Hawthorne Yedda Hawthorne Rhododendrons, Azaleas Lady Bank's Rose Black-Eved Susan: Goldstrum Leatherleaf Fern Saxifrage: Purple Dome Pincushion Flower Stonecrop Spirea: Anthony Waterer Japanese Boxcherry Japanese Yew Yew Germander Meadow Rue American Arborvitae Star Jasmine Canada Hemlock Tulip species Veronica, Speedwell Japanese Viburnum Sweet Viburnum Japanese Snowball Canary Island Viburnum Japanese Viburnum Arrowwood Viburnum Laurustinus Cranberry Bush Leatherleaf Viburnum Vinca Dwarf Periwinkle

\* Do not use on food-producing trees, vines, or plants.

Grape\*

Old Fashioned Weigela

Yucca, Adam's Needle

Spanish Bayonet

\*\*Not for use on container-grown plants.

#### <sup>†</sup> Not for Use in California.

#### Use Precautions - Container, Field-Grown, and Landscape Ornamental Plantings, and Christmas Tree Farms

- 1. Do not exceed a dosage of Quali-Pro Prodiamine 4L of 1.5 pounds active/acre (48 fl oz/acre) per year on any site.
- Disturbing the herbicide barrier with cultural practices such as disking, harrowing, and deep raking can result in reduced weed control.

#### CHEMIGATION INSTRUCTIONS - OVERHEAD SPRINKLER IRRIGA-TION APPLICATION

- Apply this product only through an overhead sprinkler irrigation system. Do not apply this product through any other type of irrigation system.
- Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result in non-uniform distribution of treated water. If you have questions about calibration, contact State Extension Service specialists, equipment manufacturers, or other experts.
- To avoid injury to foliage, make sure foliage is sufficiently wet before application or adequate irrigation is applied after application.
- 4. If sprinkler distribution patterns overlap excessively, injury to leatherleaf ferns and other ornamentals can result.
- 5. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to public water systems unless pesticide label-prescribed safety devices for public water systems are in place.
- 6. If necessary, a person knowledgeable of the chemigation system and responsible for its operation, or someone under the supervision of the responsible person, shall shut the system down and make necessary adjustments.

#### **Operation Instruction**

- The system must contain a functional check valve, vacuum-relief valve, and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
- The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- 3. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely effected.
- 6. Systems must use a metering pump such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
- Do not apply when wind speed favors drift beyond the area intended for treatment.
- 8. Prepare a mixture with a minimum of 20 parts of water and 1 part Quali-Pro Prodiamine 4L and inject this herbicide suspension mixture into the overhead system. Injecting a larger volume of a more dilute mixture per hour will usually provide more accurate calibration of metering equipment. Maintain sufficient agitation to keep the herbicide in suspension.
- Before injecting Quali-Pro Prodiamine 4L into the system, run the irrigation system long enough to wet the foliage, then inject Quali-Pro

Prodiamine 4L suspension mixture in the pesticide supply tank (see Number 8 above) in 1 inch of irrigation water. After the application is complete, continue the irrigation until all residues are washed off the foliage.

### STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: For minor spills, leaks, or other accidental contamination, follow all precautions indicated on this label and clean up immediately. Take special care to avoid contamination of equipment and facilities during clean up and disposal of wastes.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility. CONTAINER HANDLING:

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 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 if available, or puncture and dispose of container 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 can 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.

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