

AUG - 5 1994

James S. Fickie, Ph.D.  
Sandoz Agro, Inc.  
1300 East Tenny Avenue  
Des Plaines, IL 60018

Dear Dr. Fickie:

Subject: BARRICADE® 65WG herbicide  
EPA Registration No. 05947-43  
Application dated July 7, 1994, Revised Labeling  
in response to Agency's letter dated May 6, 1994,  
Additional Amendments Listed in Your Letter  
dated July 5, 1994, Resubmitted Labeling Received  
July 29, 1994.

The subject amendments reflected in the proposed labeling submitted with your July 7, 1994 application and the resubmitted labeling received July 29, 1994 are acceptable under the Federal Insecticide, Fungicide and Rodenticide Act as amended provided that you:

1. Revise the first statement on page 5 to read:  
"BARRICADE 65WG Herbicide (Barricade) is a ...."  
If you wish to use an abbreviated name throughout the remainder of the labeling text.
2. Delete the last three statements on page 14, or name the cultivars of species that are not tolerant to this pesticide product. Restrict the claims to those species listed as being tolerant to this product. If there are cultivars that are not tolerant under stress of heat, drought or frost damage you must name them, otherwise the using public will be misled in the use of this product. As written the proposed labeling is misleading and uncertain in its directions of use. Restrict your "consult" statement to cultivars (varieties) of species listed and give the using public an immediate contact in regard to this matter. The use of a Sandoz 800 number would be acceptable provided that you can assure this Agency that the number will be accessible throughout a reasonable period of time for the using public to use this product.

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3. The use of the term "sensitive" is unacceptable when used with describing the affects on tolerant species. Describe the response that is associated with the term "sensitive" or delete the use of that term.
4. On page 22, the statement: "Refer to the use directions..." should be revised to read: "Refer to the label of ....". Add the following instructions for use of BARRACADE in tank mixtures:

"Read and follow the label of each tank-mix partner and follow precautionary statements, directions for use, weeds controlled, and all restrictions that appear on the label of the tank-mix partner. This product cannot be mixed with any product that bears a label that prohibits against mixing with another pesticide product."

5. Submit five (5) printed copies of the final printed labeling before releasing the product for shipment.

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

A stamped copy of the label is enclosed for your records.

Sincerely yours,

Joanne L. Miller  
Product Manager (23)  
Fungicide-Herbicide Branch  
Registration Division (7505C)

Enclosure

LWilson: Diskette#ABC8:08-26-94

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Barricade 65 WG Herbicide , 55947-43  
July 27, 1994, hba65wgp.94i

*2. Carolina of Acceptance*  
ACCEPTED  
with COMMENTS  
in EPA Letter Dated

## BARRICADE® 65WG Herbicide

AUG - 5 1994

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act  
as amended, for the pesticide  
registered under EPA Reg. No.  
55947-43

### ACTIVE INGREDIENT:

Prodiamine [N<sup>2</sup>,N<sup>2</sup>-D-n-propyl-2,4-dinitro-6-(trifluoromethyl)-m-phenylenediamine] . 65.0%

INERT INGREDIENTS: ..... 35.0%  
Total 100.0%

For selective preemergence control of grass and broadleaf weeds in:

- established turf grasses (excluding golf course putting greens) and lawns
- container, field grown and landscape ornamentals
- conifer and hardwood seedling nurseries
- perennial & wildflower plantings
- plants grown for cut foliage production
- highway guardrails (guardrails), signposts, and road edge delineators
- bridge abutments and approaches
- railroad ballast and rail yards
- public utility facilities including substations, pipelines, tankfarms, pumping stations, parking & storage areas, and ungrazed fencerows

**KEEP OUT OF REACH OF CHILDREN**

### CAUTION

See next page for additional precautionary statements and  
statement of practical treatment.

EPA Reg. No. 55947-43  
EPA Est. No. 62171-MS-001

Net Contents:

Sandoz Agro, Inc.  
1300 E. Touhy Avenue  
Des Plaines, IL 60018

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## **PRECAUTIONARY STATEMENTS**

### **HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

#### **CAUTION**

Harmful if inhaled or absorbed through the skin. Avoid contact with skin, eyes, or clothing. Avoid breathing dust. Prolonged or frequently repeated skin contact, while mixing or handling the concentrated material, may cause allergic reactions in some individuals.

#### **Personal Protective Equipment (PPE):**

##### **WPS USES:**

Applicators and other handlers (other than mixers and loaders) who handle this pesticide for any use covered by the Worker Protection Standard (40 CFR Part 170) -- in general, agricultural-plant uses are covered -- must wear:

- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks

#### **Mixers and Loaders must wear:**

- Long-sleeved shirt and long pants
- Chemical-resistant gloves
- Shoes plus socks

##### **NON-WPS USES:**

Mixers and loaders who handle this pesticide for any use NOT covered by the Worker Protection Standard (40 CFR Part 170) -- in general, only agricultural-plant uses are covered by the WPS -- must wear:

- Chemical-resistant gloves

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.
- After handling this product, immediately wash the outside of gloves before removing them, then remove gloves and all other PPE. Immediately wash thoroughly and change into clean clothing.

**STATEMENT OF PRACTICAL TREATMENT**

If on skin: Wash with soap and water. Rinse thoroughly.

If inhaled: Remove to clear air.

If in eyes: Flush thoroughly with water for several minutes. Contact a physician if irritation persists.

**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 washwaters.

## **DIRECTIONS FOR USE**

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

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

### **AGRICULTURAL USE REQUIREMENTS**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

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

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
- Waterproof gloves
- Shoes plus socks

(Barricade)  
**BARRICADE® 65WG Herbicide** is a selective preemergence herbicide that provides residual control of many grass and broadleaf weeds in:

- established turf grasses (excluding golf course putting greens) and lawns
- container, field grown and landscape ornamentals
- conifer and hardwood seedling nurseries
- perennial & wildflower plantings
- plants grown for cut foliage production
- highway guardrails (guiderails), signposts, and road edge delineators
- bridge abutments and approaches
- railroad ballast and rail yards
- public utility facilities including substations, pipelines, tankfarms, pumping stations, parking & storage areas, and ungrazed fencerows

BARRICADE controls susceptible weeds by inhibiting weed seeds germination and root development. Most effective weed control will be obtained when BARRICADE is activated by at least 0.5 in of rainfall or irrigation, or with shallow (1 to 2 in) incorporation, before weed seeds germinate. Acceptable control will be obtained when BARRICADE is activated within 14 days after application.

Do not graze or feed livestock forage cut from areas treated with BARRICADE.

All applicable directions, restrictions, and precautions on the labels of EPA registered tank mix partners are to be followed.

Do not blend BARRICADE onto dry fertilizer or any other granular material.

Do not apply this product through any type of irrigation system unless otherwise instructed by this label.

Do not apply aerially.

Do not apply to golf course putting greens.

### **Mixing and Application**

Apply BARRICADE in a minimum of 20 gal/A (0.5 gal/1000 ft<sup>2</sup>) of carrier (water and/or fluid fertilizer) using a calibrated, low pressure sprayer with 50 mesh or coarser screens. A broadcast boom or hand held wand designed for herbicide or insecticide application will provide the best results. Select nozzle pressure and gallonage to provide complete coverage.

A spray colorant may be used to modify the color of BARRICADE to improve application accuracy by minimizing swath skips and overlaps.

Thorough mixing of BARRICADE in the spray tank is essential for uniform application. Fill the spray tank half full with clean water or fluid fertilizer. Start agitation and check to ensure it is working properly, then add BARRICADE directly into the tank.

Add the rest of the carrier to obtain the final spray volume. Maintain vigorous agitation in the spray tank before and during the application. This will ensure a well mixed spray suspension.

Thoroughly clean the sprayer after use by flushing the system with water containing a detergent. Refer to Pesticide Disposal Section of this label for waste disposal. Do not allow spray suspension to dry in the tank.

BARRICADE may be tank mixed with certain other EPA registered herbicides to provide a broader spectrum of weeds controlled or to control emerged weeds. See **Mixing Order** in this section and the **ESTABLISHED TURF, ORNAMENTALS, AND INDUSTRIAL VEGETATION MANAGEMENT** sections for specific recommendations.



### Mixing Order for Tank Mixtures

When mixing BARRICADE with other components (carrier and partner pesticide products) add the products to the spray tank in the following order:

1 - Water dispersible granules (WG formulations) and wettable powders (WP formulations). Wettable powders should be premixed with a small amount of carrier to form a slurry before addition; water dispersible granules can be added directly during filling. Allow the product to disperse completely before other products are added.

2 - Flowable liquids (FL) or suspension concentrates (SC).

3 - Emulsifiable concentrates (EC).

4 - Surfactants approved for application to turf and ornamentals listed on this label. Check surfactant label before use.

### Compatibility Test

Before mixing BARRICADE with other pesticides in the spray tank, test the compatibility by mixing all components (carrier and pesticide products) in a small container in proportionate quantities (see following table).

Amount of Component to Add to One Pint of Spray Carrier  
(Assuming Volume is 25 Gallons per Acre)

COMPONENT FORMULATIONS	-----RATE PER-----		LEVEL TEASPOONS
	ACRE	1000 ft <sup>2</sup>	
Dry	1.0 lb	0.4 oz	1.5
Liquid	1.0 pt	0.4 oz	0.5

If components do not ball-up or form flakes, sludge, gels, oily films or layers; then the tested spray mix is compatible. Incompatibility in any of the above forms will usually occur within 5 minutes after mixing.

If components are incompatible, the use of a compatibility agent is recommended. Repeat the above compatibility test with commercially available compatibility agents until a suitable compatibility agent is identified.

### **ESTABLISHED TURF**

BARRICADE is a selective preemergence herbicide that, when properly applied, will control certain grass and broadleaf weeds in established turf grass and lawns. The maximum amount of BARRICADE that may be applied per year is given for each turf grass species in the Maximum Annual Rates section of this label.

Most effective weed control in turf grasses will be obtained when BARRICADE is activated by at least 0.5 in of rainfall or irrigation within 14 days after application and prior to weed seed germination. See the map below for approximate crabgrass seed germination dates.

### **CRABGRASS SEED GERMINATION DATES**

Approximate Date

## USE PRECAUTIONS

The following precautions apply to the use of BARRICADE in turf grasses and lawns:

Application of BARRICADE may thin emerged annual bluegrass and newly over-seeded grasses.

Do not apply to overseeded turf within 60 days after seeding or until after the second mowing, whichever is longer. Injury to desirable seedlings is likely if BARRICADE is applied before seedling secondary roots are in the second inch of soil, not thatch plus soil.

Do not apply to newly set sod until the following year.

Application of BARRICADE to turf stressed by drought, low fertility, or pest damage may result in turf injury.

Disturbing the herbicide barrier with cultural practices such as disking may result in reduced weed control.

Do not apply BARRICADE to putting greens or areas where dichondra, colonial bentgrass, velvet bentgrass or annual bluegrass (Poa annua) are desirable species.

### Rates of Application

BARRICADE may be applied as a single application or in sequential applications to control weeds germinating throughout the year. All applications must be made prior to germination of the target weeds. BARRICADE will not control established weeds.

Maximum use rate selection should be based on turf species. The length of time of residual weed control provided by BARRICADE is related to the rate applied.

### Maximum Annual Rates

BARRICADE is recommended for use on the turf grass species listed in the following table. Do not exceed the maximum yearly rate as given in the following table:

Maximum Rate / Calendar Year of BARRICADE by Turf Grass Species <sup>1)</sup>		
Turf Species	lb/A	oz/1000 Ft <sup>2</sup>
Bermudagrass <sup>2)</sup> Bahia grass Centipedegrass Seashore Paspalum Tall Fescue (including turf-type) Zoysia	2.3	0.83
Buffalograss Kentucky Bluegrass Perennial Ryegrass	1.50	0.55
Creeping Red Fescue St. Augustinegrass	1.15	0.4
Creeping Bentgrass	1.0	0.37

<sup>1)</sup> These are the maximum rate per calendar year by species limitations. Consult your distributor or Sandoz representative for specific rate recommendations.

<sup>2)</sup> May be used on newly sprigged or plugged Bermudagrass at rates not to exceed 0.80 lb/A ( 0.30 oz/1000 ft<sup>2</sup> ). Newly sprigged or plugged Bermudagrass stolcr. rooting may be temporarily retarded.

## Weeds Controlled

When used in accordance with this label BARRICADE will provide control of the following weeds:

Crabgrass (large, smooth)  
Annual Bluegrass (Poa annua)  
Goosegrass<sup>1</sup>  
Annual Foxtails  
Barnyardgrass  
Broadleaf Signalgrass  
Johnsongrass (from seed)  
Rescuegrass<sup>3</sup>

Carpetweed  
Common Chickweed  
Common Lambsquarter  
Common Purslane  
Henbit  
Knotweed  
Pigweed  
Prostrate Spurge  
Shepherd's purse<sup>2</sup>  
Yellow woodsorrel (from seed)

1. In many areas a single application of 1 to 2.3 lb/A BARRICADE will control goosegrass. However, under heavy goosegrass pressure and/or an extended growing season, make an initial application of 1 to 1.5 lb/A followed after 60 to 90 days by a second application of 0.8 to 1.3 lb/A for season long goosegrass control. Do not exceed the maximum rate for turf grass species listed in the Maximum Annual Rate Table above.

2. Applications for this weed should be made in late summer, fall or winter prior to germination.

3. Suppression only.

Sequential applications may be made so long as the total amount of product applied does not exceed the maximum annual application rates recommended for each turf species. All applications must be made prior to germination of the weed seeds.

### **Overseeding / Reseeding**

BARRICADE will inhibit the germination of turf species if overseeded too soon after application. Wait 4 to 6 months per 0.75 lb/A BARRICADE applied when grass seed is to be broadcasted over the turf surface. This overseeding interval can be shortened to 3 to 4 months per 0.75 lb/A when grass seed is drilled directly into the soil. The interval between application and overseeding / reseeding is dependent on the application rate, soil temperature, and soil moisture. A shorter period may be used if growing conditions are warm and wet, and the longer interval if conditions are cool and dry.

### **Turf Tank Mixes**

BARRICADE may be tank mixed with other registered turf herbicides for broader spectrum weed control. Tank mixes may be used only in states where the tank mix partner(s) are registered for the application site and the turf species listed above.

Consult the label(s) of the individual tank mix partner(s) for use, rate recommendations, application timing, weeds controlled, turf grass safety and specific precautions and/or restrictions.

Before mixing tank mix partner(s) in the spray tank it is advisable to test compatibility by mixing the products in a small container. See the **Compatibility Test** section under **Mixing and Application**.

## **ORNAMENTALS**

### **CONTAINER, FIELD GROWN AND LANDSCAPE ORNAMENTALS (including Christmas Trees, Perennials and Wildflowers)**

BARRICADE may be applied for residual preemergence weed control in ornamentals.

#### **Use Rates**

Apply BARRICADE at 1 to 2.3 lb/A in fall and/or spring. Equivalent applications for smaller areas are 0.36 to 0.83 oz/1000 ft.<sup>2</sup> Use the higher rate of application for longer control periods. Sequential or single applications are allowed so long as the total amount of product applied does not exceed the maximum annual application rate of 2.3 lb/A.

#### **Application Timing and Information**

BARRICADE may be applied to newly transplanted and established container or field nursery stock as a broadcast, over the top or directed spray. Irrigation or rainfall soon after application will wash residues off plant foliage and activate BARRICADE in the soil.

BARRICADE may be applied at any time to established plants. Delay application to allow soil to settle around new transplants and water thoroughly before applying BARRICADE. Apply BARRICADE after cuttings form roots and become established. Apply before budding/grafting or after buds/grafts have taken to avoid any inhibition of the tissue union.

BARRICADE may be applied to soil (including mulch, gravel, wood chips, or other permeable base) upon which containerized ornamentals are placed. Shallow cultivation or hand weeding, if necessary, should be performed so as to minimize exposure of untreated soil.

BARRICADE is a preemergence herbicide and will not control emerged weeds. Most effective weed control in ornamentals will be obtained when BARRICADE is activated by at least 0.5 in of rainfall or irrigation, or with shallow (1 to 2 in) incorporation, before weed seeds germinate. Acceptable control will be obtained when BARRICADE is activated within 14 days after application.

Best weed control is obtained when BARRICADE is applied to soil free of clods, weeds, and debris such as leaves and mulch. Prior to application of BARRICADE, control existing vegetation by hand weeding, cultivation or the use of an appropriate postemergence herbicide. The following section gives directions for the use of BARRICADE in tank mixtures for use on ornamentals.

#### **BARRICADE Tank Mixtures For Use On Ornamentals**

BARRICADE may be tank mixed with other registered herbicides for a broader spectrum of preemergence control or control of emerged weeds. Tank mixes are for use only in states where the tank mix partner(s), application site and intended use pattern are registered.

Follow the label(s) of potential tankmix partner(s) for use, rate recommendations, application timing, weeds controlled, phytotoxicity and specific precautions and /or restrictions.

Before combining tank mix partners in the spray tank it is advisable to test compatibility by mixing the products in a small container. See the **Compatibility Test** section under **Mixing and Application**.

Paraquat and glyphosate are nonselective postemergence herbicides used for control of most emerged annual grass and broadleaf weeds. Drift of paraquat or glyphosate onto desirable plants can cause injury. Tank mixes using paraquat or glyphosate should be applied as a directed spray, shielded if necessary, to avoid contact with desirable species.

Goal® in tank mixes with BARRICADE is effective for the postemergence control of certain broadleaf weeds including malva and filaree. Goal in tank mixes with BARRICADE can only be applied to conifers listed on the Goal label.

#### **Tolerant Ornamental Species**

BARRICADE will not harm most ornamental trees, shrubs and flowers. The species listed below are tolerant to BARRICADE. BARRICADE may be applied over the top of these species without injury.

Under circumstances of stress (such as heat, drought, frost damage), some cultivars of listed plants may be sensitive to BARRICADE. Ornamental plant species not listed may be sensitive to BARRICADE. Users who wish to apply BARRICADE on ornamental species or varieties not listed below ~~should~~ consult their distributor or Sandoz representative.



**Scientific name**

**Common name**

<b>Acer palmatum</b>	<b>Japanese Maple</b>
<b>A. platanoides</b>	<b>Norway Maple</b>
<b>Actinidia chinensis</b>	<b>Kiwi*</b>
<b>Agapanthus africanus</b>	<b>Lily-of-the-Nile</b>
<b>Arctostaphylos densiflora</b>	<b>Vine Hill Manzanita</b>
<b>Arctotheca calendula</b>	<b>Cape Weed</b>
<b>Aucuba japonica</b>	<b>Japanese Aucuba</b>
<b>Barberis gladwynensis</b>	<b>Barberry</b>
<b>B. julianae</b>	<b>Wintergreen Barberry</b>
<b>B. mentorensis</b>	<b>Mentor Barberry</b>
<b>B. thunbergii</b>	<b>Japanese Barberry</b>
<b>B. verruculosa</b>	<b>Warty Barberry</b>
<b>Buxus microphylla</b>	<b>Japanese Boxwood</b>
<b>Callistemon viminalis</b>	<b>Weeping Bottlebrush</b>
<b>Calluna vulgaris</b>	<b>Scotch Heather</b>
<b>Carpobrotus edulis</b>	<b>Hottentot Fig (Ice Plant)</b>
<b>Cassia artemisoides</b>	<b>Feathery Cassia</b>
<b>Ceanothus rigidus</b>	<b>Wild Lilac</b>
<b>Chamaecyparis pisifera</b>	<b>False Cypress</b>
<b>Cleyera japonica</b>	<b>Cleyera</b>
<b>Citrus spp.*</b>	<b>Citrus species</b>
<b>Cornus florida</b>	<b>Flowering Dogwood</b>
<b>C. stolonifera</b>	<b>American Dogwood</b>
<b>Cortaderia selloana</b>	<b>Pampas Grass</b>
<b>Cotoneaster apiculatus</b>	<b>Cranberry Cotoneaster</b>
<b>C. buxifolius</b>	<b>Cotoneaster</b>
<b>C. dammeri</b>	<b>Bearberry Cotoneaster</b>
<b>C. microphyllus</b>	<b>Rockspray Cotoneaster</b>
<b>Cretaeus spp.</b>	<b>Hawthorne</b>
<b>Cupressus sempervirens</b>	<b>Italian Cypress</b>
<b>Delasperma alba</b>	<b>White Trailing Ice Plant</b>
<b>Dodonea viscosa</b>	<b>Hop Bush</b>
<b>Elaeagnus pungens</b>	<b>Silverberry</b>
<b>Euonymus fortunei</b>	<b>Wintercreeper</b>
<b>E. japonica</b>	<b>Evergreen Euonymus</b>
<b>E. kiautschovica</b>	<b>Spreading Euonymus</b>
<b>Fatsia japonica</b>	<b>Japanese Aralia</b>
<b>Forsythia intermedia</b>	<b>Border Forsythia</b>
<b>F. viridissima</b>	<b>Greenstem Forsythia</b>
<b>Gardenia jasminoides</b>	<b>Gardenia, Cape-Jasmine</b>
<b>Hedera helix</b>	<b>English Ivy</b>
<b>Hibiscus rosa-sinensis</b>	<b>Chinese Hibiscus</b>

Scientific name

Common name

<i>Ilex cornuta</i>	Chinese Holly
<i>I. crenata</i>	Japanese Holly
<i>I. opaca</i>	American Holly
<i>I. pernyi</i>	Holly
<i>Jasminium nudiflorum</i>	Winter Jasmine
<i>Juniperus chinensis</i>	Chinese Juniper
<i>J. conferta</i>	Shore Juniper
<i>J. horizontalis</i>	Creeping Juniper
<i>Juglans sp.</i>	Walnut*
<i>Justicia brandegeana</i>	Shrimp Plant
<i>Lagerstromia indica</i>	Crepe Myrtle
<i>Ligustrum amurense</i>	Amur Privet
<i>L. japonicum</i>	Japanese Privet
<i>L. lucidum</i>	Glossy Privet
<i>Liriope muscari</i>	Big Blue Lily Turf
<i>Lonicera japonica</i>	Japanese Honeysuckle
<i>L. tatarica</i>	Tatarian Honeysuckle
<i>Maleophora luteola</i>	Ice Plant
<i>Malus sp.</i>	Crabapple*
<i>Nandina domestica</i>	Heavenly Bamboo
<i>Olea europa</i>	Olive*
<i>Ophiopogon japonicus</i>	Mondo Grass
<i>Osteospermum fruticosum</i>	Trailing African Daisy
<i>Oxydendrum arboreum</i>	Sourwood
<i>Persea americana</i>	Avocado*
<i>Photinia fraseri</i>	Frasier's Photinia
<i>Picea abies</i>	Norway Spruce
<i>Pieris japonica</i>	Lily-of-the-Valley Shrub
<i>Pinus brutia</i>	Calabrian Pine
<i>P. canariensis</i>	Canary Island Pine
<i>P. halepensis</i>	Aleppo Pine
<i>P. nigra</i>	Austrian Black Pine
<i>P. radiata</i>	Monterey Pine
<i>P. thunbergiana</i>	Japanese Black Pine
<i>P. strobus</i>	Eastern White Pine
<i>P. sylvestris</i>	Scotch Pine
<i>Pistachio sp.</i>	Pistachio*
<i>Pittosporum rhombifolium</i>	Queensland Pittosporum
<i>P. tobira</i>	Japanese Pittosporum
<i>Podocarpus macrophyllus</i>	Japanese Yew
<i>Prunus laurocerasus</i>	English Laurel

Scientific name	Common name
-----	-----
Prunus sp.	Almond, Apricot, Nectarine, Peach, Plum and Prune *
Pyracantha coccinea	Firethorn
P. fortuneana	Firethorn
P. koidzumii	Firethorn
Pyrus sp.	Bradford Pear sp.
Quercus rubra	Red Oak
Raphiolepis indica	Indian Hawthorne
Rhododendron	'Coral Bells'
(including Azalea)	'Formosa'
	'Hino-crimson'
	'PJM'
	'Roseum Elegans'
Rosa banksiae	Lady Bank's Rose
Rosmarinus officinalis	Rosemary
Rumohra adiantiformis	Leatherleaf Fern
Santolina virens	
Sedum album	Stonecrop
Syzygium paniculatum	Japanese Boxcherry
Taxus cuspidata	Japanese Yew
T. media	Yew
Thuja occidentalis	American Arborvitae
Trachelospermum asiaticum	Star Jasmine
Tsuga canadensis	Canada Hemlock
Viburnum japonicum	Japanese Viburnum
V. odoratissimum	Sweet Viburnum
V. plicatum	Japanese Snowball
V. rigidum	Canary Island Viburnum
V. tinus	Laurustinus
V. trilobium	Cranberry Bush
V. wrightii	
Vinca minor	Dwarf Periwinkle
Vitis sp.	Grape *
Weigela florida	Old Fashioned Weigela
Yucca aloifolia	Spanish Bayonet
Y. filamentosa	Yucca, Adam's Needle

\*Ornamental species only. Do not use on food producing trees or vines.

### CONIFER AND HARDWOOD SEEDLING NURSERIES

BARRICADE may be applied for residual preemergence weed control in conifer and hardwood seedling nurseries.

BARRICADE may be applied to conifer and hardwood seedling nurseries any time after the soil has settled around newly transplanted seedlings, liners or bare root plants.

Apply BARRICADE at 1 to 2.3 lb/A in fall and/or spring. Equivalent applications for smaller areas are 0.36 to 0.83 oz/1000 ft.<sup>2</sup> Use the higher rate of application for longer control periods. Sequential or single applications are allowed so long as the total amount of product applied does not exceed the maximum annual application rate of 2.3 lb/A.

Sprinkler irrigation (0.5 in. or more) or shallow (1 to 2 in.) cultivation should be used to activate the herbicide if adequate rainfall fails to occur within 14 days following application. X2X

BARRICADE may be tank mixed with Goal® in conifer seedling nurseries for broader spectrum preemergence weed control. Refer to the use directions of tank mix partner herbicides for additional weeds controlled, rates and precautions.

## CUT FOLIAGE PRODUCTION

**BARRICADE may be applied for residual preemergence weed control in leatherleaf fern, (*Rumohra adiantiformis*), asparagus fern (aka treefern, *Asparagus virgatus*), *Pittosporum* species, *Euonymus* species, aspidistra (*Aspidistra elatior*), and *Ruscus hypopyllum*.**

Apply BARRICADE as a broadcast or directed treatment to established foliage production beds at a rate of 3 to 4 lb/ A in the fall followed by 2 to 3 lb/A in the spring. The choice of rate should depend upon anticipated weed pressure and spectrum. Sequential or single applications are allowed so long as the total amount of product applied does not exceed the maximum annual application rate of 6 lb/A.

One half inch irrigation should be applied immediately following application to activate BARRICADE in the soil and remove visible product residues.

### Overhead Irrigation 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 from nonuniform distribution of treated water. If you have questions about calibration, you should contact State Extension Service specialist, equipment manufacturers or other experts. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless pesticide label-prescribed safety devices for public water systems are in place. Should the need arise, 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 Instructions

1. The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

5. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.
8. Prepare a mixture with a minimum of 20 parts of water to 1 part BARRICADE 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.
9. Before injecting BARRICADE into the system, run the irrigation system long enough to wet the foliage, then inject BARRICADE suspension mixture in the pesticide supply tank (see number 8 above) in 1 in of irrigation water. After the application is complete, continue the irrigation until all the residues are washed off the foliage.

Precaution for overhead applications: (1) injury may occur if foliage is not sufficiently wet prior to application or inadequate irrigation is applied after application, (2) When sprinkler distribution patterns do not overlap sufficiently, unacceptable weed control may result. Where sprinkler distribution patterns overlap excessively, injury to leatherleaf ferns may result.

**Application Precautions**

Application of solutions containing BARRICADE directly to rapidly growing tissues or buds may cause deformation or injury. To reduce injury potential under these circumstances, immediately wash BARRICADE from plant surfaces onto soil.

Do not apply to newly transplanted ferns until after the plants have become established and begin to grow.

**Weeds Controlled**

Florida Betony  
Buttercup Oxalis  
Crabgrass species  
Common Vetch

Stachys flordana  
Oxalis pes-caprae  
Digitaria spp.  
Vicia sativa

**Weeds Suppressed**

Wandering-Jew

Zebrina pendula

## **INDUSTRIAL VEGETATION MANAGEMENT**

BARRICADE may be applied for preemergence control of many grass and broadleaf weeds in non-cropland areas to soil surrounding:

- highway guardrails (guiderails), signposts, and road edge delineators
- bridge abutments and approaches
- railroad ballast and rail yards
- public utility facilities including substations, pipelines, tankfarms, pumping stations, parking & storage areas, and ungrazed fencerows

BARRICADE provides preemergence control of germinating weed seeds. BARRICADE will provide optimum weed control if activated by at least 0.5 in rainfall or irrigation, or shallow incorporation before weed seeds begin to germinate.

Apply BARRICADE at 2.3 lb/A in fall and/or spring. Equivalent application for smaller areas is 0.83 oz/1000 ft<sup>2</sup>. Sequential or single applications are allowed so long as the total amount of product applied does not exceed the maximum annual application rate of 2.3 lb/A.

BARRICADE may be tank-mixed with other registered turf herbicides for broader spectrum preemergence or postemergence weed control of existing weeds or brush. Tank-mixes are for use only in states where the tank-mix partner(s) are registered for the application site.

BARRICADE may be tankmixed with Vanquish®, diuron, Gallery®, Garlon®, glyphosate, Krovar® I & II, Oust®, paraquat, Predict®, Princep®, Spike®, and Telar®, among others. Refer to the use directions of these respective herbicides for additional weeds controlled, rates and precautions.



#### **NEW PLANTINGS, REPLANTING AND CROP ROTATION**

If areas are to be seeded, do not apply BARRICADE until seeded plants are up and well established.

Nursery or non-cropland areas treated with BARRICADE should be rotated only to ornamental species listed on this label for 1 year following application unless the following test has shown species safety:

Before planting a species not listed on this label it is recommended that several test strips of an indicator plant such as wheat, sorghum or corn be sown 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 retreat exposed soil to maintain satisfactory weed control.

## **STORAGE AND DISPOSAL**

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

### **STORAGE**

Store in original container away from fertilizer, feed, or food stuffs and separated from other pesticides.

### **PESTICIDE DISPOSAL**

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

### **CONTAINER DISPOSAL**

Paper bags and boxes: Completely empty container into application equipment. Then dispose of empty bag or box in a sanitary landfill or at an incineration facility; or, if allowed by state and local authorities, by burning locally. If burned, stay out of smoke.

## **LIMITATION OF WARRANTY AND LIMITATION OF LIABILITY**

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

It is impossible to eliminate all risks inherently 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 Sandoz or seller. All such risks shall be assumed by buyer or user.

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