

2217-759

03/05/2013

1/16



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF
CHEMICAL SAFETY AND
POLLUTION PREVENTION

James Kuntsman, Ph.D.
PBI/Gordon Corporation
1217 W. 12th Street
P.O. Box 014090
Kansas City, MO 64101-0090

MAR 5 2013

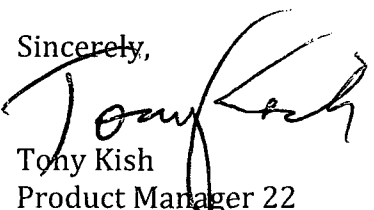
Subject: Product Name: Embark 2-S Plant Growth Regulator
EPA Reg. No. 2217-759
Submission date: 2/8/2013
Notification of California Proposition 65 Label Statement
OPP Decision Number: 475416

Dear Dr. Kuntsman:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action requested falls within the scope of PRN 98-10.

The Agency accepts the addition of a label statement to comply with California Proposition 65. The label submitted with the application has been stamped "Notification" and will be placed in our records.

If you have any questions concerning this letter, please contact Kaitlin Keller at 703-308-8127 or keller.kaitlin@epa.gov.

Sincerely,

Tony Kish
Product Manager 22
Fungicides Branch
Registration Division (7504P)

2/16

Please read instructions on reverse before completing form.

Form Approved. OMB No. 2070-0060. Approval Expires 2-28-95

	United States Environmental Protection Agency Washington, DC 20460	<input type="checkbox"/> Registration <input type="checkbox"/> Amendment <input checked="" type="checkbox"/> Other	OPP Identifier Number
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Application for Pesticide - Section I

1. Company/Product Number 2217-759	2. EPA Product Manager Tony Klsh	3. Proposed Classification
4. Company/Product (Name) Embark 2-S Plant Growth Regulator	PM# Product Manager—Team 22	<input checked="" type="checkbox"/> None <input type="checkbox"/> Restricted
5. Name and Address of Applicant (Include ZIP Code) PBI/Gordon Corporation Post Office Box 014090 Kansas City, Missouri 64101 <input type="checkbox"/> Check if this is a new address	6. Expedited Review. In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to: EPA Reg. No. _____ Product Name _____	

Section - II

<input type="checkbox"/> Amendment - Explain below.	<input type="checkbox"/> Final printed labels in response to Agency letter dated _____	<div style="font-size: 2em; font-weight: bold;">NOTIFICATION</div> <div style="font-size: 1.5em; font-weight: bold;">MAR 05 2013</div>
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application.	
<input checked="" type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Other - Explain below.	

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

Notification per Pesticide Registration Notice (PRN) 98-10: Section IV(C)


We ask to add a statement to comply with California Prop 65. Please refer to page 13 of the enclosed draft label.

e-mail to jkunstman@pbigordon.com FAX: 816-421-2731

Section - III

1. Material This Product Will Be Packaged In:			
Child-Resistant Packaging <input type="checkbox"/> Yes* <input checked="" type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	2. Type of Container <input type="checkbox"/> Metal <input checked="" type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify) _____
* Certification must be submitted		If "Yes" Unit Packaging wgt. No. per container	If "Yes" Package wgt. No. per Container
3. Location of Net Contents Information <input checked="" type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container 1 gallon, 2.5 gallon	
		5. Location of Label Directions <input checked="" type="checkbox"/> On Label <input type="checkbox"/> On Labeling accompanying product	
6. Manner in Which Label is Affixed to Product <input type="checkbox"/> Lithograph <input type="checkbox"/> Other _____ <input checked="" type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled			

Section - IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)		
Name James L. Kunstman, Ph.D.	Title Director of Regulatory Services	Telephone No. (Include Area Code) 816-460-3292
2. Signature 		6. Date Application Received: <div style="font-size: 1.5em; font-weight: bold;">(Stamped)</div>
3. Title Director of Regulatory Services		
4. Typed Name James L. Kunstman, Ph.D.		
		5. Date February 8, 2013

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1217 W. 12th STREET · P.O. BOX 014090
KANSAS CITY, MISSOURI 64101-0090
816-421-4070 · 1-800-821-7925
FAX: 816-474-0462

2/19

February 8, 2013

Document Processing Desk (NOTIF)
Office of Pesticide Programs (7504P)
US Environmental Protection Agency
Room S-4900, One Potomac Yard
2777 South Crystal Drive
Arlington, VA 22202-4501

Attn: Tony Kish, PM (22)

Dear Mr. Kish:

Subject: Labeling notification per PRN 98-10: Notifications Non-notifications and Minor Formulation Amendments.

Embark 2-S Plant Growth Regulator (EPA Reg. No. 2217-759)

I. Labeling Notification per Pesticide Registration Notice (PRN) 98-10: Section IV (C)

We ask to add the following statement to comply with California Proposition 65:
"Attention: This product contains a chemical known to the state of California to cause cancer."
Please refer to page 13 of the enclosed draft labeling.

II. Certification statements:

This notification is consistent with the provisions of PR Notice 98-10 and EPA regulations at 40 CFR 152.46, and no other changes have been made to the labeling or the confidential statement of formula of this product. I understand that it is a violation of 18 U.S.C. Sec. 1001 to willfully make any false statement to the EPA. I further understand that if this notification is not consistent with the terms of PR Notice 98-10 and 40 CFR 152.46, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under Section 12 and 14 of FIFRA.

III. Enclosures:

1. Application for Pesticide Amendment (EPA Form 8570-1)
2. One (1) copy the draft labeling with annotations.
3. One (1) copy the draft labeling without notations.

If you have any questions, please call me at 816-460-6292 or contact me at jkunstman@pbigordon.com.

Sincerely,

James L. Kunstman, Ph.D.
Director of Regulatory Services

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EMBARK® 2-S PLANT GROWTH REGULATOR

NOTIFICATION

MAR 05 2013

EPA Reg. No. 2217-759

ACTIVE INGREDIENT:

Diethanolamine salt of mefluidide (N-[2,4-dimethyl-5-[[trifluoromethyl)sulfonyl]amino]phenyl]acetamide)

28.00%

OTHER INGREDIENTS:

72.00%

TOTAL

100.00%

THIS PRODUCT CONTAINS:

2.0 lb mefluidide acid equivalent (N-[2,4-dimethyl-5-[[trifluoromethyl)sulfonyl]amino]phenyl]acetamide) per gallon or 21% by weight.

KEEP OUT OF REACH OF CHILDREN

CAUTION

STOP! READ THE ENTIRE LABEL FIRST. OBSERVE ALL PRECAUTIONS AND FOLLOW DIRECTIONS CAREFULLY.

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

CAUTION: Causes moderate eye irritation. Avoid contact with eyes or clothing. Harmful if swallowed.

Personal Protective Equipment (PPE)

All mixers, loaders, applicators and other handlers must wear:

- Long-sleeved shirt,
- Long pants and,
- Shoes plus socks.

User Safety Requirements

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

User Safety Recommendations

- Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly, and put on clean clothing.
- Users should 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.

First Aid	
If in eyes:	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
If inhaled:	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. • Call a poison control center or doctor for treatment advice.
If swallowed	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If on skin or on clothing:	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 - 20 minutes. • Call a poison control center or doctor for treatment advice.
<p>Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-877-800-5556 for emergency medical treatment advice.</p>	

Environmental Hazards

Do not apply directly to water, or 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 or rinsate.

This chemical (mefluidide) has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

DIRECTIONS FOR USE

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

Not for use on turf being grown for sale or other commercial use as sod, or for commercial seed production, or for research purposes.

USE PRECAUTIONS AND RESTRICTIONS

- 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.
- Do not enter or allow others to enter until sprays have dried.

Embark® 2-S Plant Growth Regulator (PGR) may be applied to various species of turfgrass, ground covers, ornamental shrubs and trees in public, commercial, or industrial areas for reducing the frequency of mowing and trimming.

SPRAY EQUIPMENT:

The following spray equipment is suitable for:

- **Ornamentals and Groundcovers:** Use a power sprayer equipped with hand-held spray gun or vehicular-mounted equipment that will deliver sufficient spray to penetrate dense foliage and provide thorough coverage of all parts of shrubs or plants.
- **Turfgrasses and Low Maintenance Grasses:** Use conventional power spray equipment fitted with a spray boom, off-center nozzles, or handgun (spray gun). Hand-pump sprayers are suitable for edging or spot treatments.

SPRAY PREPARATION:

Pour the required amount of Embark® 2-S PGR into the spray tank containing approximately one-half the required amount of water. Fill the tank as required with water and spray as recommended. Minimal agitation in the spray tank is necessary.

CALIBRATION:

It is essential that spray equipment is properly adjusted and calibrated to assure proper dosage and uniform spray coverage. Follow the spray equipment manufacturer's directions for cleaning, adjusting pressure and selecting appropriate nozzles.

CLEANING:

Do not use spray equipment for other purposes until thoroughly cleaned. Flush spray equipment with plenty of water immediately after use to avoid contamination of later sprays.

Spray Drift Requirements

Wind direction

Only apply this product if the wind direction favors on target deposition.

Wind Speed

Do not apply when the wind velocity exceeds 15 mph.

Temperature Inversions

Do not make ground spray applications into temperature inversions. Inversions are characterized by stable air and increasing temperatures with height above the ground. Mist or fog may indicate the presence of an inversion in humid areas. The applicator may detect the presence of an inversion by producing a smoke layer near the ground surface.

Droplet Size

Use only Medium or coarser spray nozzle (ASAE S572)

Additional Requirements for Groundboom Applications

All ground boom application equipment must be properly maintained and calibrated using appropriate carriers or surrogates. Do not apply with a nozzle height greater than 4 feet above the ground or foliage canopy.

[I.] Turfgrass

USE SITES:

Embark® 2-S PGR may be applied to specified turfgrasses in commercial and public areas including:

- **COMMERCIAL-INDUSTRIAL AREAS:** Highway rights-of-way, utility rights-of-way, buildings, industrial parks, tank farms, airports.
- **PUBLIC AREAS:** Schools, libraries, hospitals, cemeteries, golf courses (except greens), parks, roads, walkways, condominiums, and apartment complexes.
- **UNCULTIVATED AGRICULTURAL AREAS:** Around farm buildings, storage sheds, implement storage sheds, implement storage areas, and roadsides.

MOWING:

When mowing after application: For an evenly trimmed appearance grass may be mowed 3 to 7 days after Embark® 2-S PGR is applied.

When mowing before application: Grass may be mowed up to two days before applying Embark® 2-S PGR. Clippings and other debris should be removed before spraying. If mowing removes most of the

green leaf tissue, spraying should be delayed until sufficient new growth develops to assure product absorption into green leaves.

When mowing is not desired or practical: Apply Embark® 2-S PGR in the spring, after green-up, but before mowing is necessary, thus avoiding mowing until growth regulation wears off.

TANK MIXING WITH HERBICIDES:

Embark® 2-S PGR may be tank-mixed with one of the following herbicides to control broadleaf weeds:

HERBICIDE	MAXIMUM RATE
Trimec® Classic Broadleaf Herbicide	4 pints of product/acre
2,4-D low volatile ester and amine salt formulations	1.5 lb active ingredient/acre
MCP-p in amine salt formulations	1.5 lb active ingredient/acre

ROADSIDE, LOW MAINTENANCE GRASSES AND UNCULTIVATED AGRICULTURAL AREAS:

Maximum benefits, including season long seedhead suppression of cool season grasses, can be attained by applying 2 pints/acre of Embark® 2-S PGR with surfactant after uniform grass green-up until approximately 2 weeks before seedhead appearance. Embark® 2-S PGR applications will give vegetative growth suppression for up to 8 weeks; however, a mowing will be necessary to eliminate escape seedheads which have not emerged. If temporary discoloration of turf occurs and is objectionable, reduce the 2 pint rate to 1.5 pints/acre. (See Tables 1 and 2).

For roadside and low maintenance turf in California, follow the recommended rates according to Table 2.

The maximum application rate is 4.0 pints of product per acre per application (1.0 lb mefluidide ae per acre per application). The maximum seasonal rate is 8.0 pints of product per acre per year (2.0 lb mefluidide ae per acre per season).

SURFACTANTS:

The use of a nonionic surfactant (except Calif.) is recommended to increase the extent and consistency of turfgrass regulation on roadside and low maintenance turf only. The recommended surfactant rate is 0.25 to 0.5% v/v (1 to 2 quarts/100 gallons of spray solution). Temporary, slight discoloration of turf may increase with the use of a surfactant.

LIMITATIONS ON TURFGRASS:

- Do not apply Embark® 2-S PGR to golf greens.
- Do not apply to turf areas within 4 growing months after seeding and do not reseed within 3 days following application (except Calif. where reseeding may not occur within 2 weeks). Turf treated with Embark® 2-S PGR may appear less dense and temporarily discolored when compared with untreated, actively growing turf. However, with increasing time, turf may appear darker green than untreated areas.
- Do not contaminate food or feed.
- Do not feed clippings to livestock. Do not graze livestock in treated areas.
- Keep out of lakes, streams, and ponds.

CULTURAL TIPS:

- Embark® 2-S PGR, applied to turfgrass, reduces mowing requirements for 6 weeks following treatment by regulating growth and preventing seedhead formation. Apply Embark® 2-S PGR uniformly to green, actively growing turf. For season long seedhead suppression of cool season grasses, apply no later than when the seedhead can be felt at the base of the stem (approximately 2 weeks prior to seedhead appearance). Do not apply to closely mowed areas, where most of the green growth has been cut.
- Remove excessive grass clippings and leaves prior to treatment.
- Avoid spray overlaps that will increase dosage above those recommended.

- Embark® 2-S PGR may be applied more than once per season, however, wait at least 6 weeks between applications.
- In turfgrass renovation programs, areas treated with Embark® 2-S PGR may be reseeded 3 days following application (except Calif. where reseeding may not occur within 2 weeks).

IRRIGATION AND RAINFALL:

Optimum results may not be obtained if rainfall or overhead irrigation occurs within 8 hours following application. Do not contaminate water intended for irrigation or domestic purposes. Do not apply through any type of irrigation system. To prevent product run-off, do not apply when raining or when rain is expected within 8 hours. Do not irrigate for 8 hours after application.

TABLE 1. Application Rates for Turfgrass.

Species	Application Rates of Embark® 2S		Remarks
	Per Acre in 15 to 150 Gal Water ¹	Fl.Oz. Per 1000 Sq.Ft. ¹	
Annual Bluegrass ² (<i>Poa annua</i>) (seedhead suppression only).	0.5 pint	0.2 fl.oz.	For seedhead suppression only: Apply after uniform green-up but before the first appearance of seedheads. Applications after first seedhead appearance will suppress seedheads which have not emerged.
Kentucky Bluegrass & Annual Bluegrass, Tall, Red & Chewing Fescues, Perennial Ryegrass, Timothy, Reed Canarygrass, Quackgrass, Kikuyugrass, Crested Wheatgrass ² , Orchardgrass ² , Smooth Bromegrass ² , Centipedegrass	1.5 pints	0.6 fl.oz.	For those grasses recommended at 1.5 pint rate, a slightly longer period of growth regulation can be attained with a 2 pint/acre rate. If temporary discoloration of turf occurs and is objectionable reduce the 1.5 pint rate to 1 pint/acre.
St. Augustinegrass	1 pint	0.4 fl.oz.	
Common Bermudagrass	4 pints	1.5 fl.oz.	

¹ The amount of water used to give adequate and uniform spray coverage is dependent on the type of spray equipment used.
² Except California.

TABLE 2. Application Rates for Turfgrass, CALIFORNIA ONLY.

Species	Application Rates of Embark® 2S		Remarks
	Per Acre in 15 to 150 Gal Water ¹	Fl.Oz. Per 1000 Sq.Ft. ¹	
Kentucky Bluegrass & Annual Bluegrass, Tall, Red & Chewing Fescues, Perennial Ryegrass, Timothy, Reed Canarygrass, Quackgrass, Centipedegrass, Kikuyugrass	1.5 pints	0.6 fl.oz.	For grasses recommended at the 1.5 pint rate, reduce the rate to 1 pint/acre if temporary discoloration of turf occurs and is objectionable. In turfgrass renovation programs, areas treated with Embark® 2-S PGR may be reseeded 2 weeks following application.
St. Augustinegrass	1 pint	0.4 fl.oz.	
Common Bermudagrass	4 pints	1.5 fl.oz.	
Native Grasses & Broadleaf Vegetation Grasses: Wild Barley, Red Brome, Ripgut Brome, Wild Oats Broadleaves: Cheeseweed, Sour Clover, Fiddleneck, Redstem Filaree, Black Mustard	2 pints	0.8 fl.oz.	For native grass and broadleaf vegetation, areas with high soil fertility may require up to 4 pints/acre.

Species	Application Rates of Embark® 2S		Remarks
	Per Acre in 15 to 150 Gal Water ¹	Fl.Oz. Per 1000 Sq.Ft. ¹	
¹ The amount of water used to give adequate and uniform spray coverage is dependent on the type of spray equipment used.			

[II.] Ornamentals and Groundcovers

USE SITES:

Embark® 2-S PGR may be applied to specified ornamentals and groundcovers in commercial and public areas including:

- **COMMERCIAL-INDUSTRIAL AREAS:** Highway rights-of-way, utility rights-of-way, buildings, industrial parks, tank farms, airports.
- **PUBLIC AREAS:** Schools, libraries, hospitals, cemeteries, golf courses, parks, roads, walkways, condominiums, office and apartment complexes.

LIMITATIONS:

- Do not apply to plants that are stressed, diseased, or otherwise unhealthy.
- Do not apply to plants grown in containers.
- Before using Embark® 2-S PGR on ornamentals, thoroughly clean spray tank to remove any broadleaf herbicide that may be present.
- This product is intended to eliminate undesired (nuisance) fruit on ornamental olive trees, and this product is not intended for fresh fruit (olive) production.
- Do not contaminate food or feed.
- Do not feed clippings to livestock. Do not graze livestock in treated areas.
- Keep out of lakes, streams, and ponds.

IRRIGATION AND RAINFALL:

Optimum results may not be obtained if rainfall or overhead irrigation occurs within 8 hours following application. Do not contaminate water intended for irrigation or domestic purposes. Do not apply through any type of irrigation system. To prevent product run-off, do not apply when raining or when rain is expected within 8 hours. Do not irrigate for 8 hours after application.

APPLICATION RATES FOR ORNAMENTALS AND GROUNDCOVERS:

Embark® 2-S PGR applied as a full cover spray to specified ornamental shrubs, hedges, trees and groundcovers reduces trimming and pruning for up to 8 weeks. See table 3.

Species of Ornamental Plant			
Common/botanical name	Scientific name	Pints per 100 gallons of water	fl.oz. per gallon of water
GROUNDCOVERS:			
African Daisy	<i>Arctotis spp.</i>	4 pints	0.6 fl.oz.
Algerian Ivy	<i>Hedera canariensis</i>		
English Ivy	<i>Hedera helix</i>		
Capeweed, Matgrass or Turkey-Tangle	<i>Phyla nodiflora</i>		
Ice plant	<i>Mesembryanthemum crystallinum</i>		
Rosemary	<i>Rosmarinus officinalis</i>		
Periwinkle, Trailing or Myrtle	<i>Vinca minor</i>		
For growth regulation, apply Embark® 2-S PGR as a full cover spray with foliage penetration to the drip point. Applications should be made to healthy, actively growing plants 7 to 14 days after pruning or trimming. Once the plant resumes active growth, pruning and repeat applications may be made.			

SHRUBS AND TREES:			
Abelia	<i>Abelia x grandiflora</i>	4 pints	0.6 fl.oz.
Acacia	<i>Acacia spp.</i>		
Barberry	<i>Berberis spp.</i>		
Bottlebrush	<i>Callistemon spp.</i>		
Bougainvillea	<i>Bougainvillea spp.</i>		
Box or Boxwood, Common, Korean or Japanese	<i>Buxus spp.</i>		
Brazilian Pepper Tree or Christmas Berry Tree	<i>Schinus terebinthifolius</i>		
Carob	<i>Ceratonia siliqua</i>		
Coprosma	<i>Coprosma</i>		
Crape Myrtle	<i>Lagerstroemia indica</i>		
Elaeagnus, Oleaster, Wild Olive, Silverberry, Thorny Elaeagnus	<i>Elaeagnus spp</i>		
Euonymus	<i>Euonymus spp.</i>		
Eugenias and Brush Cherry or Australian Bush Cherry	<i>Eugenia myrtifolia</i>		
Fig, Creeping Fig, Climbing Fig or Creeping Rubber Plant	<i>Ficus repens or Ficus pumila</i>		
Fig, Laurel, Benjamin Tree or Weeping Fig	<i>Ficus nitida</i>		
Fire Thorn and Scarlet Fire Thorn	<i>Pyracantha spp.</i>		
Heavenly Bamboo or Sacred Bamboo	<i>Nandina spp.</i>		
Hibiscus, Rose of China, Mallow or Rose Mallow	<i>Hibiscus spp.</i>		
Holly, Japanese ¹	<i>Ilex crenata</i>		
Holly, Chinese or Burford	<i>Ilex cornuta cv. 'Burfordii'</i>		
Holly, English, European or Oregon	<i>Ilex aquifolium</i>		
Holly, Yaupon, Cassina or Cassena	<i>Ilex vomitoria</i>		
Honeysuckle	<i>Lonicera spp.</i>		
Italian Buckthorn	<i>Rhamnus alaternus</i>		
Indian Hawthorn	<i>Raphiolepis indica</i>		
Jasmine or Jessamine	<i>Jasminum spp.</i>		
Laurel	<i>Laurus</i>		
Melaleuca, Honey Myrtle or Bottlebrush	<i>Melaleuca spp.</i>		
Myoporum	<i>Myoporum spp.</i>		
Myrtle	<i>Myrtus spp.</i>		
Myrtle, Common, Compact, Dwarf, Greek, Swedish, German and Polish	<i>Myrtus communis</i>		
Nandina species including Heavenly Bamboo or Sacred Bamboo	<i>Nandina spp.</i>		
Oleander, Common Oleander or Rosebay	<i>Nerium oleander</i>		
Osmanthus species including American Olive, Fragrant Olive, Holly Olive, Chinese Holly, False Holly	<i>Osmanthus spp.</i>		
Photinia, Red tip	<i>Photinia fraseri</i>		
Photinia, Japanese	<i>Photonia glabra</i>		
Pittosporum, Japanese Pittosporum, Mock Orange, Tobira or Australian Laurel	<i>Pittosporum tobira</i>		
Podocarpus, Southern Yew, Japanese Yew or Buddhist Pine	<i>Podocarpus macrophyllus</i>		
Privet, Amur, Border, Chinese, California, European and Wax-leaf Privet	<i>Ligustrum spp.</i>		
Viburnum	<i>Vibumum spp.</i>		

Table 3. Rates of Embark® 2-S PGR for ornamentals throughout the U.S.			
Species of Ornamental Plant			
Common/botanical name	Scientific name	Pints per 100 gallons of water	fl.oz. per gallon of water
Xylosma	<i>Xylosma spp.</i>		
For growth regulation, apply Embark® 2-S PGR as a full cover spray with foliage penetration to the drip point. Applications should be made to healthy, actively growing plants 7 to 14 days after pruning or trimming. Once the plant resumes active growth, pruning and repeat applications may be made.			
SHRUBS AND TREES:			
Ornamental Olives		1 pint	0.2 fl.oz.
For fruit suppression of olive trees, apply Embark® 2-S PGR as a full cover spray at prebloom (tight bud stage) through the 5% bloom stage. See footnotes 2 and 3.			

¹ Except California

² Embark® 2-S PGR will reduce or eliminate undesirable fruit from olive trees. Two foliar applications are recommended during the prebloom or tight bud stage through the 5% bloom stage of the trees. Mix 1 pint of product per 100 gallons of water per application. The interval between the first and the second applications (± 2 weeks) may vary between seasons and will be determined by the local environmental conditions. Full cover sprays are required, and all surfaces of the leaves and flower buds should be sprayed to the drip point. Flowers that have pollinated will set fruit. Spray volumes will depend on tree size. Generally, trees 20 to 30 ft in height may require 10 to 15 gallons of spray solution per tree.

³ This product is intended to eliminate undesired (nuisance) fruit on ornamental olive trees, and this product is not intended for fresh fruit (olive) production.

[III. Optional text for IVM products]

[Begin optional text

Embark® 2-S PGR can be incorporated into highway vegetation management programs to eliminate seedhead production and to reduce the mowing requirements. Embark® 2-S PGR may be applied to bermudagrass and six species of established cool season grasses in noncropland sites. (See Tables 4 and 5). Embark® 2-S PGR may be useful in the following noncropland areas:

- **Highway rights-of-way:** (principal, interstate, state, and county highways), interchange ramps, waysides, service areas, and unpaved roads
- **Municipal, state, and federal lands including:** airports, military installations, schools/universities, libraries, and hospitals
- **Commercial/Industrial areas including:** industrial parks, tank farms, plant sites, storage areas, fencerows, and utility rights-of-way.

Embark® 2-S PGR inhibits the growth of tall fescue, Kentucky bluegrass, perennial ryegrass, smooth brome grass, orchardgrass, and reed canarygrass and common bermudagrass. Mixed stands of these coarse textured species may respond unevenly to applications of Embark® 2-S PGR and the tank mixtures. All established perennial grasses should be at least one year old.

Spray Equipment and Mixing Instructions

Spray Equipment:

Use conventional power spray equipment with bypass or mechanical agitation and fitted with a spray boom, off-center nozzles, or a spray gun.

It is essential that spray equipment is properly adjusted and calibrated to assure proper dosage and uniform spray coverage. Follow the spray equipment manufacturer's directions for cleaning, adjusting pressure and selecting appropriate nozzles.

Spray Volumes:

Spray volumes of 15 to 150 gallons per acre are recommended. Uniform application is essential. Avoid spray overlaps that will increase the dosage above those recommended.

Surfactants and Spray Colorants:

The use of a nonionic surfactant is recommended to increase the extent and consistency of the growth regulation. The suggested surfactant rate is 0.25 to 0.50% v/v or 1 to 2 quarts per 100 gallons of spray solution. Temporary, slight discoloration of the turf may increase with the use of a surfactant.

The use of a colorant is recommended to allow the applicator to make uniform applications.

Spray Preparation for Tank Mixtures:

Embark® 2-S PGR may be applied in combination with one or more of the specified herbicides or plant growth regulators. These tank mixtures must be used according to the most restrictive label limitations and precautions. No label dosage rate should be exceeded. Follow the labeling of each companion product for precautionary statements, directions for use, dosage rates, and application schedules. Tank mixture recommendations are for use only in states where the companion products and application site are registered.

Follow these guidelines and refer to the labeling of the companion product for further instructions.

1. Add 1/2 to 2/3 of the required amount of water into the spray tank.
2. Add the appropriate amount of the companion product (dispersible granules, ammonium salt formulations, or dimethylamine salt formulations) into the spray tank with agitation.
3. Pour the appropriate amount of Embark® 2-S PGR into the spray tank.
4. Continue agitation while adding the remainder of water and add the measured amounts of nonionic surfactant and spray colorant.
5. Continue agitation throughout the spraying operation.

Seedhead Suppression:

The application window or timing is critical for the optimum seedhead control.

Generally, the application window for the best results will range from 2 to 3 weeks. The beginning of the application window for Embark® 2-S PGR occurs in the spring after full green-up with rapid vertical growth. The end of the application window occurs approximately 2 weeks prior to the seedhead appearance or when the seedhead can be felt at the base of the stem. Applications of Embark® 2-S PGR after the optimum window will result in reduced seedhead suppression.

Embark® 2-S PGR must be applied prior to the seedhead appearance at the stem apex. Application of Embark® 2-S PGR after the seedhead emergence will suppress only the later forming seedheads.

Inconsistencies of seedhead suppression may occur with mixed stands. Different grass species may vary in the inflorescence development and in their responses to the plant growth regulators.

Refer to Table 5 for the application rates for seedhead suppression and refer to Table 6 for recommendations appropriate for California.

Vegetative Growth Suppression:

Embark® 2-S PGR will provide growth inhibition for 6 to 8 weeks under favorable growing conditions. Apply Embark® 2-S PGR with a nonionic surfactant after full green-up of turfgrass in the spring. At the time of treatment, turf should have developed the desired appearance, the desired height, and sufficient leaf area for uptake.

Apply 24 to 32 fl.oz. (1.5 to 2.0 pints) of Embark® 2-S PGR per acre with a nonionic surfactant to actively growing turf for growth suppression up to 8 weeks. If temporary discoloration of the turfgrass occurs and is objectionable, reduce the 2 pints of product rate to 1.5 pints of product per acre. Refer to Tables 4 and

5 for the recommended rates for tank mixtures applied to low maintenance turf. Refer to Table 6 for the recommendations appropriate for California.

Embark® 2-S PGR may be applied more than once per season, however follow an application interval of at least 6 weeks between applications.

The maximum application rate is 4.0 pints of product per acre per application (1.0 lb mefluidide ae per acre per application). The maximum seasonal rate is 8.0 pints of product per acre per year (2.0 lb mefluidide ae per acre per season).

Cultural Practices:

MOWING:

- **Mowing before application:** Grass may be mowed up to two days before applying Embark® 2-S PGR. Clippings and other debris should be removed before spraying. If mowing removes most of the green leaf tissue, spraying should be delayed until sufficient new growth develops to assure product absorption into green leaves.
- **Mowing after application:** For an evenly trimmed appearance grass may be mowed 3 to 7 days after Embark® 2-S PGR is applied.
- **When mowing is not desired or practical:** Apply Embark® 2-S PGR after full green-up in the spring, but before mowing is necessary.

IRRIGATION AND RAINFALL:

Optimum results may not be obtained if rainfall or overhead irrigation occurs within 8 hours following application. Do not contaminate water intended for irrigation or domestic purposes. Do not apply through any type of irrigation system. To prevent product run-off, do not apply when raining or when rain is expected within 8 hours. Do not irrigate for 8 hours after application.

STRESSES:

Applications of Embark® 2-S PGR to turfgrass that is stressed because of high air temperatures, drought, excessive soil water, diseases, or insects may cause temporary discoloration. Management practices to promote the health and vigor of the turfgrass should be continued on the treated areas.

PRECAUTIONS AND LIMITATIONS:

- Turf treated with Embark® 2-S PGR may appear less dense and temporarily discolored when compared with untreated, actively growing turf.
- In turfgrass renovation programs, areas treated with Embark® 2-S PGR may be reseeded 3 days following application (except California where reseeding may not occur within 2 weeks).
- Do not apply to any body of water such as lakes, streams, rivers, canals, ponds, reservoirs, or bays. Also, do not apply to areas where water is present on the soil surface such as swamps, bogs, potholes, or marshes. However, it is allowable to treat seasonally dry swamps, bogs, potholes, or marshes, berms of ditches, and road shoulders.
- Do not contaminate food or feed.
- Do not feed clippings to livestock. Do not graze livestock in treated areas.
- Keep out of lakes, streams, and ponds.]

Table 4. Application Rates for Embark® 2-S Plant Growth Regulator and tank mixtures for six cool season turfgrasses (tall fescue, Kentucky bluegrass, perennial ryegrass, orchardgrass, smooth brome grass and red canarygrass) established in noncropland sites.

Product Name	Amount of Product	
	fl.oz./acre	ounces/acre
1. Embark® 2-S Plant Growth Regulator	24 to 32	---
2. Embark® 2-S Plant Growth Regulator plus Event Grass Growth Regulator	8 4	--- ---
3. Embark® 2-S Plant Growth Regulator plus Telar® Herbicide Dispersible Granule	12 to 16 ---	--- 0.25

4. Embark® 2-S Plant Growth Regulator plus Event™ Grass Growth Regulator plus Arsenal® Herbicide (2 lb/gal)	8 4 1.5	--- --- ---
5. Embark® 2-S Plant Growth Regulator plus Arsenal® Herbicide (2 lb/gal)	8 2	--- ---
6. Embark® 2-S Plant Growth Regulator plus Escort® Herbicide Dry Flowable	8 ---	--- 0.125 to 0.25

Table 5. Application Rates for Embark® 2-S Plant Growth Regulator for common bermudagrass established in noncropland sites.

Product Name	Amount of Product	
	fl.oz./acre	ounces/acre
Embark® 2-S Plant Growth Regulator	64	---

Table 6. Application Rates for Embark® 2-S Plant Growth Regulator for use on roadsides and low maintenance turfgrass in California only.

Turfgrass	Amount of Product	
	pints/acre	fl.oz. acre
Kentucky bluegrass, tall fescue, perennial ryegrass, reed canarygrass	1.5 pints	24
Common Bermudagrass	4 pints	64
Native Grasses: Wild barley, red brome, ripgut brome, wild oats Broadleaf Vegetation: Cheeseweed, sour clover, fiddleneck, redstem filaree, black mustard	2 pints	32

end optional text]

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Store in original container in a locked storage area inaccessible to children or pets.

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

[For Plastic Containers – Nonrefillable with capacities equal to or less than 5 gallons:]

CONTAINER HANDLING: Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available, 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.

Triple rinse [or pressure rinse] container (or equivalent) 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.

[Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.]

[For Plastic Containers – Nonrefillable with capacities greater than 5 gallons:]

CONTAINER HANDLING: Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available, 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.

Triple rinse [or pressure rinse] container (or equivalent) promptly after emptying.

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 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.

[Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.]

[For Refillable Containers:]

CONTAINER HANDLING: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose.

Container cleaning: Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

LIMITED WARRANTY AND DISCLAIMER

IMPORTANT: Read this LIMITED WARRANTY AND DISCLAIMER before buying or using this product. By opening and using this product, buyer and all users agree to accept the terms of this LIMITED WARRANTY AND DISCLAIMER in their entirety and without exception. If the terms are not acceptable, return this product unopened immediately to the point of purchase, and the purchase price will be refunded in full.

It is impossible to eliminate all risks inherently associated with use of this product. Damage to the treated article, ineffectiveness, or other unintended consequences can result from use of the product under abnormal conditions such as weather, presence of other materials, or the manner of use or application, etc. Such factors and conditions are beyond the control of the manufacturer, and **BY PURCHASING AND USING THIS PRODUCT THE BUYER AND ALL USERS OF THIS PRODUCT AGREE TO ACCEPT ALL SUCH RISKS.** Buyer and all users further agree to assume all risks of loss or damage from the use of the product in any manner that is not explicitly set forth in or that is inconsistent with label instructions, warnings and cautions.

The manufacturer warrants only that this product conforms to the chemical description given on the label, and that the product is reasonably suited for the labeled use when applied according to the Directions for Use, subject to the inherent risks described below. **TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE MANUFACTURER NEITHER MAKES NOR INTENDS ANY OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY EXPRESSLY DISCLAIMED.**

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF BUYER AND ALL USERS OF THIS PRODUCT, AND THE EXCLUSIVE LIABILITY OF THE MANUFACTURER, FOR ANY AND ALL LOSSES, DAMAGES, OR INJURIES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER OR NOT BASED IN CONTRACT, NEGLIGENCE, STRICT LIABILITY IN TORT OR OTHERWISE, SHALL BE LIMITED, AT THE MANUFACTURER'S OPTION, TO REPLACEMENT OF OR THE REPAYMENT OF THE PURCHASE PRICE FOR THE QUANTITY OF PRODUCT WITH RESPECT TO WHICH DAMAGES ARE CLAIMED. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, IN NO CASE SHALL THE MANUFACTURER BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL, OR SPECIAL DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT. The Manufacturer must be promptly notified in writing of any claims, whether based in contract, tort, negligence, strict liability, or otherwise, to be eligible to receive either remedy stated above.

The terms of this LIMITED WARRANTY AND DISCLAIMER cannot be varied by any written or verbal statements or agreements at the point of sale or elsewhere. No employee or agent of the manufacturer or seller is authorized to vary or exceed the terms of this Limited Warranty and Disclaimer in any manner.

APPENDIX

1. Statements which may appear on different label components depending on packaging configuration.

- See next panel for additional Precautionary Statements and First Aid
- Net Contents: _____
- EPA Est. No. _____
- [Note to reviewer: This statement may be placed on containers to comply with California Prop 65: Attention: This product contains a chemical known to the state of California to cause cancer.]

2. Advertising claims that may be presented on container labeling, advertisements, brochures, and other marketing/sales promotional materials:

- Reduces Frequency of Mowing and Trimming of Certain Grasses and Ornamentals.
- Embark®, Trimec® and Hi-Dep® are registered trademarks of PBI/Gordon Corporation.
- Event® and Arsenal® are registered trademarks of BASF
- Escort® and Telar® are registered trademarks of E.I. DuPont de Nemours and Co. Inc.

3. Previously-Approved Brand Names.

- Embark® 2-S Plant Growth Regulator
- Embark® 2-S IVM Plant Growth Regulator

DOCUMENT CONTROL INFORMATION

1. Unique Label Identifier: 002217-00759.20100824.amend-accepted-clean.doc

2. Reason for Issue: Prop 65 statement

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