

Embark[®] 2-S

Plant Growth Regulator

Reduces frequency of mowing and trimming of certain grasses and ornamentals

ACTIVE INGREDIENT:
Diethanolamine salt of mefluidide (N-[2,4-dimethyl-5-[[trifluoromethyl]sulfonyl]amino]phenyl]acetamide) 28.0%

OTHER INGREDIENTS: 72.0%

100.0%

THIS PRODUCT CONTAINS:
2.0 lbs. 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



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	
<ul style="list-style-type: none"> • 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. <p style="text-align: right;"><i>(cont. on next column)</i></p>

First Aid (cont.)	
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.
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.	

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.

1. 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.

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, Rippgut 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.

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

2. 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		Pints per 100 gallons of water	fl.oz. per gallon of water
Common/botanical name	Scientific name		
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>		

(Table 3 Shrubs and Trees continued on next page)

Table 3. Rates of Embark® 2-S PGR for ornamentals throughout the U.S. (cont.)			
Species of Ornamental Plant		Pints per 100 gallons of water	fl.oz. per gallon of water
Common/botanical name	Scientific name		
SHRUBS AND TREES (cont.):			
Jasmine or Jessamine	<i>Jasminum spp.</i>	4 pints	0.6 fl.oz.
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>Viburnum spp.</i>		
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.

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.

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.

OR

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.

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.

