

# **ESTABLISHED COOL SEASON TURFGRASS**

## General Information

### Product Information

Defendor specialty herbicide provides postemergence control of annual and perennial broadleaf weeds in established lawns (residential and commercial), commercial sod farms, ornamental and sports turf, (sports fields, golf course fairways, roughs, tee boxes, unimproved turfgrass areas), and cemeteries. Susceptible weeds emerged at the time of application will be controlled. Uniform coverage is required for optimum performance. Defendor is rainfast within four hours after application and has soil residual herbicidal activity dependent upon weed species, soil type, soil moisture (rainfall or irrigation after application) and the rate of application.

### Application Directions

#### Adjuvants

When Defendor is applied alone, use a non-ionic surfactant with at least 80% active ingredient at 2 pints per 100 gallons of spray solution (0.25% v/v). When Defendor is applied in combination with emulsifiable concentrate formulations such as 2,4-D ester or MCPA ester, or other herbicides which require use of an adjuvant, additional adjuvant is not required. When an adjuvant is to be used with this product, Dow AgroSciences recommends the use of a Chemical Producers and Distributors Association certified adjuvant.

#### Standard Volume Broadcast Application

Apply in a spray volume of 20 gpa or more (0.5 gallons or more per 1000 sq ft). Use a higher application volume when complete and uniform application must be ensured, i.e., when Defendor is tank mixed with foliar fertilizers. If required, spray volume up to 200 gpa may be used.

### Low Volume Application

Apply in a spray volume of 5 to 20 gpa (0.11 to 0.5 gallons per 1000 sq ft). Use low pressure and application equipment capable of delivering a uniform spray droplet. To improve spray coverage, the addition of a nonionic surfactant is suggested (see Adjuvants).

### Spot Treatments and/or Hand-Held Sprayers

Apply spot treatments at rates equivalent to broadcast applications. Hand-Held Sprayers: When treating a small area, apply Defendor with a calibrated sprayer that assures accurate, uniform spray distribution. Thoroughly mix Defendor with clean water and applied at 20 to 40 psi in a minimum of 1 gallon of water per 1000 sq ft.

### Weeds Controlled or Suppressed by Defendor

To maximize control of early season spring weeds apply Defendor in the mid to late winter and early spring when weeds are young and just beginning active growth. Fall application timings have been particularly effective when targeting perennial broadleaf weeds. Weeds growing in the absence of competition from other vegetation generally require repeat applications to obtain satisfactory control or suppression.

Dollarweed (pennywort): Repeat applications may be necessary. If weed recovery occurs, make a 2nd application 4 weeks after the first.

### Specific Use Instructions for Dandelion Control

Late Winter/Early Spring Application: Application should occur prior to or at the initiation of vegetative development of dandelion. Dandelion will be small and may not be visible in the turf canopy at this time. Application at this time will best control dandelion and prevent bloom from occurring. Applications made just prior to or at flower stalk growth initiation will not control bloom and control may be reduced.

Dandelion, common: Fall Application: Defendor should be applied when high temperatures subside or cool and fall foliage on trees begin to appear (i.e. leaves begin to change color) up to the first hard killing frost. Applications at this time will best control dandelions and prevent bloom the following spring.

Bittercress, hairy, chamomile, chickweed (mouseear), cudweed, fleabane, groundsel common, parsley-piert, smartweed Pennsylvania, kyllinga, annual and green, nutsedge yellow, Virginia buttonweed: Not registered for use in California

## Limitations, Restrictions, and Exceptions

### Turfgrass Establishment

Defendor may be applied to perennial ryegrass and tall fescue at seeding, early emergence or once established. Applications of this product during establishment of other cool and warm season turfgrass has not been evaluated. Users who choose to apply Defendor to turfgrass, other than perennial ryegrass and tall fescue during establishment and shortly after emergence, may determine the suitability for use by treating a small area at a specified rate. Prior to treatment of larger areas, observe the treated area for any sign of herbicidal injury during 30 days of normal growing conditions to determine if the target turfgrass species is tolerant. Use of this product on turf that has been weakened by weather, pest, disease, chemical, mechanical or other related stress, may result in turf injury.

### Established Turfgrass

Defendor may be used on seeded, sodded, or sprigged lawns, ornamental turfgrass and unimproved turfgrass that are well established with the exception of perennial ryegrass and tall fescue as noted under Turfgrass Establishment. Newly established turf must have developed a good root system and a uniform stand, and have received at least two mowings following seeding or sprigging before making the first application of this product. Use of this product on turf that is not well established, or has been weakened by weather, pest, disease, chemical, mechanical or other related stress, may result in turf injury.

**Treatment on Turfgrass Species Not Listed on the Label for Defendor** Users who wish to use Defendor on turfgrass species not listed on this label may determine the suitability for use by treating a small area at a specified rate. Prior to treatment of larger areas, observe the treated area for any sign of herbicidal injury during 30 days of normal growing conditions to determine if the target turfgrass species is tolerant.

### Precautions

- When applying this product in tank mix combinations, follow all applicable use directions, precautions, and limitations on each manufacturer's label.

- For best results, Defendor used alone or in tank mixes should not sit overnight or for prolonged periods without sufficient agitation prior to use. (Also listed under "Mixing Order for Tank Mixes")
- To minimize the potential for turfgrass injury, do not make additional applications within four weeks of a previous application.

#### Restrictions

- Do not apply Defendor to golf course putting greens.
- Do not apply Defendor directly to, or otherwise permit Defendor to come into contact with desirable flowers, ornamental shrubs or trees, or other desirable broadleaf plants, as serious injury may occur. Do not permit spray mists containing Defendor to drift onto desirable broadleaf plants.
- Do not allow sprays of Defendor to contact exposed suckers or exposed roots of shallow rooted trees and shrubs or injury may occur.
- Do not use treated clippings for mulch around edible plants.
- Do not apply more than 12 fl oz of Defendor (0.75 pints; 0.039 lb ai florasulam) per acre per year.
- Use this product strictly in accordance with the drift and runoff precautions on this label in order to minimize off-site exposure.
- Chemigation: Do not apply this product through any type of irrigation system.

#### Herbicide Resistance Management

Florasulam is an ALS mode of action Group 2 herbicide. Any weed population may contain or develop plants naturally resistant to this product and other ALS herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same field. Other resistance mechanisms that are not linked to site of action, but specific for individual chemicals, such as enhanced metabolism, may also exist. Appropriate resistance management strategies should be followed.

#### To delay herbicide resistance:

- For best resistance management stewardship, do not use Defendor more than once per year or rotate the use of Defendor or other ALS herbicides with different herbicide groups that control the same weeds in a turfgrass stand or field.
- Use tank mixes with herbicides from a different group when such use is permitted.
- Base herbicide use on an IPM program that includes scouting, historical information related to herbicide use and crop rotation, and considers tillage (or other mechanical), cultural, biological and other chemical control practices.

- Monitor treated weed populations for resistance development.
- Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment and planting clean seed.
- Contact your local extension specialist or certified crop advisers for any additional pesticide resistance management and/or integrated weed management recommendations for specific crops and weed biotypes.

#### Application Timing and Rates

Best weed control results are obtained when Defendor is applied to small, actively growing weeds. Extreme growing conditions such as drought or near freezing temperatures prior to, at, or following time of application may reduce weed control. Broadleaf weed species germinate at different times.

Apply Defendor to turfgrass at the rate of 4 fl oz per acre (0.25 pints per acre; 0.09 fl oz per 1000 sq ft; 2.7 ml per 1000 sq ft) as a ground broadcast treatment or spot treatment. Calibrate application equipment prior to use according to manufacturer's directions. Avoid skips or overlaps as poor weed control or plant injury may occur.

#### Method

[Broadcast/Foliar Ground](#)

[Spot treatment](#)

Restricted Entry Interval

4 hours

#### Timings

[Postemergence \(Weed\)](#)