

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

1 of 27

62719-153

1/12/2000

Steve A. McMaster
 Dow AgroSciences LLC
 9330 Zionsville Road
 Indianapolis, IN 46268

JAN 12 2000

Dear Mr. McMaster:

Subject: Revised Labeling - Incorporate Changes Required By Oryzalin RED
 Surflan WDG
 EPA Registration No. 62719-153
 Your Submission Dated October 13, 1999

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is acceptable with the following provisions:

- 1) Revise the second sentence of the Precautionary Statements to read "Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals."
- 2) Revise the beginning of the first sentence of the third paragraph in the Agricultural Use Requirements box to read "Workers may enter treated areas without required PPE during the reentry interval following 1/2 to 1 inch of rainfall or irrigation provided that they are performing tasks that do not involve contact with the soil subsurface, otherwise..."
- 3) Revise the typographical error that occurs in the sample calculations within the section for Ornamental Plantings. Specifically, correct the symbol currently reading "□" so that it reads "1/2".
- 4) Within the use directions for Warm Season Turfgrasses, references are made to applying a repeat application of this product 8 to 10 weeks after the initial application (second to last paragraph on page 22 and second paragraph on page 24). These intervals conflict with the minimum time between applications specified by the Oryzalin RED and conflict with the chart at the top of page 24. Therefore, these references must be changed to allow repeat applications only after at least three months after the initial application.

A stamped copy is enclosed for your records. Please submit one (1) final printed copy for the referenced label, incorporating the above changes, before releasing the product for shipment.

DK:305-7546:HB/IPM23

CONCURRENCES

SYMBOL	7505C							
SURNAME	D. KENNY							
DATE	1/12/00							

EPA has determined that you have fulfilled the labeling and product specific data requirements of the Oryzalin RED. However, we cannot reregister this product at this time. This product is registered for use on turfgrass, a use for which the Agency does not have sufficient information to make a reregistration eligibility decision. Once the required data [foliar dislodgeable residues (§132-1a and §132-1b), estimation of dermal exposure (§133-3), and estimation of inhalation exposure (§133-4)]. have been reviewed by the Agency, EPA will make a reregistration eligibility decision for the turfgrass use.

Sincerely yours,

Joanne I. Miller
Product Manager (23)
Herbicide Branch
Registration Division (7505C)

Enclosure

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**ACCEPTED
with COMMENTS
In EPA Letter Dated**

JAN 12 2000

**Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.
62719-153**

(Base Label):

(logo) Dow AgroSciences LLC

Surflan* WDG

A selective preemergence surface-applied herbicide for control of annual grasses and many broadleaf weeds in:

- Landscape ornamentals
- Container grown ornamentals
- Field grown ornamentals
- Drainage areas under greenhouse benches
- Ornamental bulbs
- Ground covers
- Christmas tree plantations
- Noncropland
- Non-bearing trees and vines
- Industrial sites
- Established warm season turf (including Bahiagrass, Bermudagrass, Buffalograss, Centipedegrass, St. Augustinegrass, Tall Fescue and Zoysiagrass)

Active Ingredient:

oryzalin: 3,5-dinitro-N ⁴ ,N ⁴ -dipropylsulfanilamide	85.0%
Inert Ingredients	15.0%
Total	100.0%

Contains 0.85 pounds of active ingredient per pound of product.

CAUTION PRECAUCION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

Precautionary Statements

Hazards to Humans and Domestic Animals

Causes Moderate Eye Irritation • Prolonged or frequently repeated contact may cause allergic reactions in some individuals.

Avoid contact with eyes, skin or clothing:

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

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

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. 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

When handlers use closed systems, enclosed cabs, or aircraft 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.
- 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: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 15 minutes, then continue rinsing. Call a poison control center or doctor for treatment advice.

If on skin: 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.

Environmental Hazards

This pesticide is 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. Do not contaminate water when disposing of equipment washwaters.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to the label booklet under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

Refer to label booklet for Directions for Use, including Storage and Disposal.

Notice: Read the entire label. Use only according to label directions. **Before buying or using this product, read "Warranty Disclaimer" and "Limitation of Remedies" inside label booklet.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994. If you wish to obtain additional product information, visit our web site at www.dowagro.com.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

EPA Reg. No. 62719-153

EPA Est. _____

*Trademark of Dow AgroSciences LLC
Dow AgroSciences LLC • Indianapolis, IN 46268 U.S.A.

Specialty Herbicide

Net Weight __ lb

[Label Booklet]

(logo) Dow AgroSciences LLC

Surflan* WDG

A selective preemergence surface-applied herbicide for control of annual grasses and many broadleaf weeds in:

- Landscape ornamentals
- Container grown ornamentals
- Field grown ornamentals
- Drainage areas under greenhouse benches
- Ornamental bulbs
- Ground covers
- Christmas tree plantations
- Noncropland
- Non-bearing trees and vines
- Industrial sites
- Established warm season turf (including Bahiagrass, Bermudagrass, Buffalograss, Centipedegrass, St. Augustinegrass, Tall Fescue and Zoysiagrass)

Active Ingredient:

oryzalin: 3,5-dinitro- <i>N,N</i> -dipropylsulfanilamide	85.0%
Inert Ingredients	15.0%
Total	100.0%

Contains 0.85 pounds of active ingredient per pound of product.

Keep Out of Reach of Children

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

Agricultural Use Requirements

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Specialty Herbicide

Net Weight __ lb

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[Page 2 of label booklet]

Precautionary Statements

Hazards to Humans and Domestic Animals

CAUTION

Causes Moderate Eye Irritation • Prolonged or frequently repeated contact may cause allergic reactions in some individuals.

Avoid contact with eyes, skin or clothing.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

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

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. 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

When handlers use closed systems, enclosed cabs, or aircraft 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.
- 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: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 15 minutes, then continue rinsing. Call a poison control center or doctor for treatment advice.

If on skin: 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.

Environmental Hazards

This pesticide is 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. 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. Read All Directions for Use carefully before applying.

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 24 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.

Workers may enter treated areas without required PPE during the reentry interval following 1/2 to 1 inch of rainfall or irrigation, otherwise, PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical-resistant gloves
- Shoes plus socks

Non-Agricultural Use Requirements

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for Agricultural Pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Entry Restrictions for Non-WPS Uses: Keep all persons, children and pets out of treated area until sprays have dried.

Storage and Disposal

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

Storage: Store in original container only. In case of leak or spill, use absorbent materials to contain liquids and dispose as waste.

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

Container Disposal: Empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

General Information

Surflan* WDG herbicide is a preemergence surface-applied herbicide for the control of annual grasses and many broadleaf weeds in ornamental plantings, bulbs, ground covers, established warm-season turfgrass, Christmas tree plantations, non-bearing trees and vines, non-cropland and industrial sites.

General Use Precautions and Restrictions

Surflan WDG will not control emerged weeds. Poor weed control may result if directions are not followed. Over-application may result in crop injury or excessive soil residue.

Surflan WDG is orange in color and may cause temporary discoloration of sprayed surfaces. If this discoloration is undesirable, it may be altered by using a commercially available colorant such as Blazon or removed by spraying surface with water or washing with an industrial cleaner immediately after application. Surflan WDG may also be applied with mulch colorants, such as Mulch Magic or Nu-Mulch.

Users who wish to use Surflan WDG on plant species not recommended on this label may determine the suitability for such uses by treating a small number of such plants at a recommended rate. Prior to treatment of larger areas, the treated plants should be observed for any sign of herbicidal injury for 30 to 60 days to determine if the treatment is non-injurious to the target plant species. The user assumes responsibility for any plant damage or other liability resulting from use of Surflan WDG on plant species not recommended on this label.

Do not graze or feed forage from treated areas to livestock.

Chemigation: Do not apply this product through any type of irrigation system.

Soil Preparation

Surflan WDG will not control emerged weeds. Therefore, areas to be treated should be free of emerged weeds. Weed residues, prunings and trash should be thoroughly mixed into the soil or removed prior to treatment. In field applications, the soil should be in good tilth and free of clods at the time of application.

Mixing Directions

Surflan WDG Alone

Make sure spray tank is clean. Fill spray tank 1/4 full with clean water. Start agitation. Vigorous, continuous agitation throughout the spray tank is required with water dispersible granule (WDG) formulations. Add the correct amount of Surflan WDG to the spray tank in a controlled manner to aid in mixing and dispersion and to prevent clogging of screens and outlet ports. Maintain continuous agitation from mixing through application.

Precaution: Do not allow the mixture to siphon back into the water source.

Surflan WDG Tank Mix Combinations

Vigorous continuous agitation is required for all tank mixes of Surflan WDG. Sprayer pipe agitators generally provide the best agitation in spray tanks. To prevent foaming, keep the end of the fill pipe below the surface of the water in the spray tank during filling to prevent air from being stirred or splashed into the mixture.

Mixing Order: Fill the tank 1/4 full with clean water, start agitation and add the correct amount of Surflan WDG as described above. Fill the spray tank to about 90 percent of final spray volume. Add other formulations in the order indicated below, allowing time for complete mixing and dispersion after addition of each product. Allow extra mixing and dispersion time for dry flowable or water dispersible granule formulations.

Add different formulation types in the following order: dry flowables (DF); wettable powders (WP); flowables (F), liquids (L) or aqueous suspensions (AS); solutions (S); and emulsifiable concentrates (EC). Maintain continuous agitation during mixing, final filling and throughout application. If spraying and agitation must be stopped before the spray tank is empty, the materials may settle to the bottom. Settled materials must be completely resuspended before spraying is continued. A sprayer agitator is particularly useful for this purpose. Settled materials may be more difficult to resuspend than when originally mixed.

Premixing: When tank mixing, initial mixing and dispersion of certain dry flowable or wettable powder products may be improved by premixing with water (slurrying). Where recommended, follow product label instructions for each material. Adding the slurried material to the spray tank through a 20 or 35 mesh wetting screen will help assure good initial dispersion. Line screens in the tank should be no finer than 50 mesh (100 mesh is finer than 50 mesh).

Application Methods

Ground Application

Apply Surflan WDG as a directed spray to the soil surface or over top of plants using a vehicle-mounted, pull-type, or backpack sprayer. Apply the appropriate rate of Surflan WDG as outlined in "Approved Uses" section of this label. In all cases, use sufficient water volume to obtain uniform coverage and deliver the desired rate of Surflan WDG to the treated area. The volume of water used is not critical, as long as the desired rate of Surflan WDG is delivered uniformly across the area treated. When calibrating, determine the volume of water delivered by the sprayer to a given area (1,000 sq ft, acre, etc.). Then mix the desired rate of Surflan WDG in the amount of water required to cover the entire area to be treated. Use only a properly calibrated, low-pressure herbicide sprayer that will apply the spray uniformly. Use herbicide tips with screens no finer than 50 mesh in nozzles and in-line strainers. As the amount of water used (spray volume) decreases, the importance of accurate calibration and uniform application increases. Check the sprayer daily to ensure proper calibration and uniform application. Maintain continuous agitation from mixing through application. Avoid spray pattern skips and overlaps that may result in incomplete coverage or over-application.

Aerial Application

Aerial Application: Aerial application is prohibited, except for agricultural uses in the state of California.

Use a standard aerial herbicide boom sprayer. Aerial spray equipment should be calibrated to apply the proper amount of Surflan WDG alone or in tank mix combinations in 2 to 10 gallons of spray mixture per acre. Nozzle screens and in-line strainers should be no finer than 50 mesh. Surflan WDG mixes readily with water for concentrate aerial sprays; however, constant vigorous agitation that sweeps the contents from the bottom of the spray tank up into the main body of the liquid is required to maintain a uniform suspension until the spray tank is empty. Avoid spray pattern skips and overlaps that may result in incomplete coverage or over-application. Do not apply when wind conditions favor drift from the target area.

Spray Drift Management

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment-and-weather-related factors determine the potential for spray drift. The applicator and the

grower are responsible for considering all these factors when making decisions. The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

1. The distance of the outer most nozzles on the boom must not exceed $\frac{3}{4}$ the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees. Where states have more stringent regulations, they should be observed.

The applicator should be familiar with and take into account the information covered in the following **Aerial Drift Reduction Advisory Information**:

Importance of Droplet Size: The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversion section of this label).

Controlling Droplet Size:

Volume-Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows product larger droplets.

Pressure-Use the lower spray pressures recommended for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.

Number of nozzles-Use the minimum number of nozzles that provide uniform coverage.

Nozzle Orientation-Orienting nozzles so that the spray is released backwards, parallel to the airstream will produce larger droplets than other orientations. Significant deflection from the horizontal will reduce droplet size and increase drift potential.

Nozzle Type-Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce larger droplets than other nozzle types.

Boom Length-For some use patterns, reducing the effective boom length to less than $\frac{3}{4}$ of the wingspan or rotor length may further reduce drift without reducing swath width.

Application-Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath Adjustment: When applications are made with a cross-wind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

Wind: Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. Note: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect drift.

Temperature and Humidity: When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions: Applications should not occur during a temperature inversion, because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a connected cloud (under low wind conditions) indicates an inversion, while smoke that moves upwards and rapidly dissipates indicates good vertical air mixing.

Sensitive Areas: The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

Equipment Cleaning

If a buildup of material occurs on the walls of the spray tank, it should be removed between fillings by washing with soap and water and rinsing thoroughly. Tanks, lines, screens and nozzles should be cleaned thoroughly after each use.

Activation and Cultivation

Surflan WDG will remain stable on the soil surface up to 21 days following application. In the absence of timely rainfall, irrigation can be used to activate Surflan WDG. A minimum of one-half (1/2) inch of rain or its equivalent in sprinkler irrigation is necessary to activate Surflan WDG. If weeds begin to emerge due to lack of rainfall or irrigation, shallow cultivate 1 to 2 inches deep to destroy existing weeds or remove them by hand. Shallow cultivation to a depth of 1 to 2 inches will enhance herbicidal effectiveness. If Surflan WDG is not activated by rainfall, irrigation or cultivation within 21 days of application or existing weeds have not been removed, erratic weed control may result.

Weeds Controlled by Surflan WDG

Annual Grasses:

<u>Common Name</u>	<u>Scientific Name</u>
barley, little	<i>Hordeum pusillum</i>
barnyardgrass (watergrass)	<i>Echinochloa crus-galli</i>
bluegrass, annual	<i>Poa annua</i>
crabgrass, large	<i>Digitaria sanguinalis</i>
crabgrass, smooth	<i>Digitaria ischaemum</i>
crowfootgrass	<i>Dactyloctenium aegyptium</i>
cupgrass, southwestern	<i>Eriochloa gracilis</i>
foxtail, bristlegrass	<i>Setaria magna</i>
foxtail, giant	<i>Setaria faberi</i>

foxtail, green (pigeongrass)	<i>Setaria viridis</i>
foxtail, robust	<i>Setaria robusta</i>
foxtail, yellow	<i>Setaria glauca</i>
gcosegrass (silver crabgrass)	<i>Eleusine indica</i>
Johnsongrass (seedling only)	<i>Sorghum halepense</i>
jungerice	<i>Echinochloa colonum</i>
lovegrass, Mexican	<i>Eragrostis mexicana</i>
lovegrass, orcutt	<i>Eragrostis orcuttiana</i>
oat, wild	<i>Avena fatua</i>
panicum, browntop	<i>Panicum fasciculatum</i>
panicum, fall (spreading panicgrass)	<i>Panicum dichotomiflorum</i>
panicum, Texas (buffalograss) (Coloradograss)	<i>Panicum texanum</i>
ryegrass, Italian	<i>Lolium multiflorum</i>
sandbur, field	<i>Cenchrus incertus</i>
signalgrass (Brachiaria)	<i>Brachiaria</i> spp.
sprangletop, red	<i>Leptochloa filiformis</i>
witchgrass	<i>Panicum capillare</i>

Broadleaf Weeds:

<u>Common Name</u>	<u>Scientific Name</u>
bittercress	<i>Cardamine oligosperma</i>
carpetweed	<i>Mollugo verticillata</i>
chickweed, common	<i>Stellaria media</i>
fiddleneck, coast	<i>Amsinckia intermedia</i>
filaree, redstem	<i>Erodium cicutarium</i>
filaree, whitestem	<i>Erodium moschatum</i>
groundsel, common	<i>Senecio vulgaris</i>
henbit	<i>Lamium amplexicaule</i>
knotweed, prostrate	<i>Polygonum aviculare</i>
lambquarters	<i>Chenopodium album</i>
pigweed, prostrate	<i>Amaranthus blitoides</i>
pigweed, redroot	<i>Amaranthus retroflexus</i>
pigweed, spring	<i>Amaranthus hybridus</i>
pigweed, tumble	<i>Amaranthus albus</i>
puncturevine	<i>Tribulus terrestris</i>
purslane, common	<i>Portulaca oleracea</i>
pusley, Florida (Florida purslane) (Mexican clover) (pusley)	<i>Richardia scabra</i>
rocket, London	<i>Sisymbrium irio</i>
rockpurslane, desert	<i>Calandrinia ciliata</i>
shepherdspurse	<i>Capsella bursa-pastoris</i>
spurge, prostrate	<i>Euphorbia humistrata</i>
woodsorrel, yellow	<i>Oxalis stricta</i>

Weeds Suppressed by Surflan WDG

Control of the following weeds may be erratic, ranging from poor to excellent, depending upon soil temperature, time of germination, depth of seed in the soil, and amount and timing of soil moisture:

<u>Common Name</u>	<u>Scientific Name</u>
horseweed	<i>Conyza canadensis</i>
ladysthumb	<i>Polygonum persicaria</i>
lettuce, prickly	<i>Lactuca serriola</i>
mallow, common	<i>Malva neglecta</i>
milkweed, climbing	<i>Sarcostemma cynanchoides</i>
morningglory	<i>Ipomoea</i> spp.
mustard, black	<i>Brassica nigra</i>
mustard, wild	<i>Brassica kaber</i>
nightshade, black	<i>Solanum nigrum</i>
ragweed, common	<i>Ambrosia artemisiifolia</i>
smartweed	<i>Polygonum pensylvanicum</i>
sowthistle, annual	<i>Sonchus oleraceus</i>
spurge, spotted	<i>Euphorbia maculata</i>
teaweed (prickly sida)	<i>Sida spinosa</i>
velvetleaf	<i>Abutilon theophrasti</i>
wheat, volunteer	<i>Triticum</i> spp.

Labeled Use Sites

Ornamental Plantings

Special Use Precautions:

Apply only to established plantings. Established plants are defined as those that have been transplanted into their growing location for a sufficient period of time to allow the soil to be firmly settled around the roots from packing and rainfall or irrigation.

To avoid possible injury, do not apply Surflan WDG to:

- Either nursery seedbeds or forest or Christmas tree seedling transplant beds.
- Unrooted liners or cuttings that have been planted in pots for the first time.
- Pots less than four inches wide.
- Ground covers until they are established and well rooted.
- Ornamental plantings where there is likelihood of runoff onto lawn areas.
- Areas containing dichondra or cool season turfgrass species.

Rooted liners should be removed from their original growing containers and placed in new containers at least two weeks prior to treatment or injury may occur.

On container grown ornamentals where weed seed germination continues for extended periods of time, do not make repeat applications of Surflan WDG for at least 90 days or crop injury may occur.

For soils treated with Surflan WDG during the previous season, plant only the ornamental species listed on this label or injury may occur.

Ice Plant: When establishing unrooted ice plant (*Mesembryanthemum crystallinum* and *Carpobrotus edulis*) on coarse soils in landscape plantings, use only the 2 quart per acre rate of Surflan WDG or crop injury may occur. After the ice plant is well established, a second application may be made.

Broadcast Application Rates

Labeled Use Site	Length of Control	Surflan WDG		Minimum Time Between Applications (months)	Total Amount Allowed Per Year (lb/acre)
		(lb/acre)	(oz/1200 sq ft)		
Landscape Ornamentals	2 - 4 months	2.4	1	2	9.4
	3 - 6 months	3.5	1.5	4	14
	4 - 8 months	4.7	2	4	14
Field-grown and container-grown ornamentals	2 - 4 months	2.4	1	3	9.4
	3 - 6 months	3.5	1.5	3	10.6
	4 - 8 months	4.7	2	3	14

Handheld or Backpack Sprayer Application

Apply Surflan WDG at a rate of 1 to 2 ounces per 1200 square feet. The amount of water used to apply Surflan WDG is not critical, but should be sufficient for uniform treatment of the target area. Calibrate by determining the volume of water required to treat 1200 square feet. Use this calibration volume to determine the amount of water and Surflan WDG needed to treat the target area (see following table).

Note: Sprayer calibration (volume of spray needed to treat 1,000 square feet) will vary with each individual operator.

Length of Control	Application Rate (oz/1200 sq ft)	Quantity of Water Needed
2 to 4 months	1	The amount required by your sprayer to cover 1200 sq ft of area.
4 to 8 months	2	

Sample Calculation:

Size of target area □ 1200 x Application rate = Amount of Surflan WDG required

Size of target area □ 1200 x Calibration volume per 1200 sq ft = Amount of water required

Recommended Species Including Fruit Plant Nursery Liners

Surflan WDG is recommended for use on certain container- and field-grown established ornamental plants, trees and shrubs; established ground covers; field grown fruit tree and shrub nursery liners; and in the production of ornamental bulbs (See "Ornamental Bulbs" for special use directions).

Do not apply Surflan WDG to the following plant species when container grown or field grown or injury may occur:

- Deutzia gracilis* (slender deutzia)
- Pseudotsuga menziesii* (Douglas-fir)
- Thuja occidentalis* 'Techny' (Techny arborvitae)
- Tsuga canadensis* (eastern hemlock)

Surflan WDG May be Used on the Following Field- and Liner†- Grown Plants and Plants in Landscape Plantings:

†Plants transplanted for additional growth before transplanting to final growing location.

Common Name	Scientific Name
abelia, glossy	<i>Abelia grandiflora</i>
acacia, prostrate	<i>Acacia redolens</i>
agave	<i>Agave macroculmis</i>
Andromeda	<i>Pieris japonica</i>

apple	<i>Malus</i> spp.
arborvitae, American	<i>Thuja occidentalis</i>
arborvitae, Oriental	<i>Platycladus orientalis</i>
ash <i>Fraxinus</i> spp.	
aster, stokes	<i>Stokesia laevis</i>
astilbe/false spirea	<i>Astilbe chinensis</i> and <i>A. chinensis</i> hybrids
	<i>Rhododendron</i> spp.
azalea	<i>Gypsophila paniculata</i>
baby's breath	<i>Berberis thunbergii</i>
barberry, Japanese	<i>Campanula elatines</i>
bellflower	<i>Betula nigra</i>
birch, river	<i>Betula pendula</i>
birch, white	<i>Strelitzia reginae</i>
bird of paradise	<i>Liatris spicata</i>
blazing star	<i>Dicentra spectabilis</i>
bleeding heart	<i>Callistemon citrinus</i>
bottlebrush, lemon	<i>Buxus sempervirens</i>
boxwood, common	<i>Buxus microphylla japonica</i>
boxwood, Japanese	<i>Syzygium paniculata</i>
brush cherry	<i>Caladium bicolor</i>
caldaium, fancy leafed	<i>Umbellularia californica</i>
California laurel	<i>Campanula</i> spp.
campanula (bellflower)	<i>Dimorphotheca</i> spp.
cape marigold	<i>Ajuga</i> spp.
carpet bugle	<i>Cassia artemisioides</i>
cassia, feathery	<i>Prunus mahaleb</i>
cherry, Mahaleb	<i>Prunus avium</i>
cherry, sweet	<i>Chrysanthemum morifolium</i>
chrysanthemum, florists	<i>Cleyera japonica</i>
cleyera, Japanese	<i>Echinacea purpurea</i>
coneflower, purple	<i>Coreopsis lanceolata</i>
coreopsis	<i>Cotoneaster dammeri</i>
cotoneaster, bearberry	<i>Cotoneaster buxifolius</i>
cotoneaster, brightbead	<i>Cotoneaster apiculatus</i>
cotoneaster, cranberry	<i>Cotoneaster lacteus</i>
cotoneaster, parney	<i>Cotoneaster congestus</i>
cotoneaster, Pyrenees	<i>Cotoneaster horizontalis</i>
cotoneaster, rock	<i>Cotoneaster microphyllus</i>
cotoneaster, rockspray	<i>Populus deltoides</i>
cottonwood	
(grown for pulp)	
coyotebush, dwarf	<i>Baccharis pilularis</i>
crape Myrtle, common	<i>Lagerstroemia indica</i>
cryptomeria, Japanese	<i>Cryptomeria japonica</i>
cypress, Arizona	<i>Cupressus arizonica (glabra)</i>
cypress, Italian	<i>Cupressus sempervirens</i>
daisy, gloriosa	<i>Rudbeckia hirta</i>
(black-eyed Susan)	
daisy, painted	<i>Chrysanthemum coccineum</i>
daisy, shasta	<i>Chrysanthemum maximum</i>
daisy, trailing African	<i>Osteospermum fruticosum</i>
daylily	<i>Hemerocallis</i> spp.
dogwood, flowering	<i>Cornus florida</i>
dogwood, kousa	<i>Cornus kousa</i>

eastercactus	<i>Rhipsalidopsis gaertneri</i>
escallonia	<i>Escallonia exoniensis</i>
eucalyptus, mealy	<i>Eucalyptus cinerea</i>
eucalyptus, narrow-leaved	<i>Eucalyptus nicholii</i>
eucalyptus, red	<i>Eucalyptus sideroxylon</i>
euonymus, evergreen	<i>Euonymus japonica</i>
euonymus, stringybark	<i>Euonymus fortunei</i>
euonymus, winged	<i>Euonymus alata</i>
falsecypress, Lawson	<i>Chamaecyparis lawsoniana</i>
fatshedera	<i>Fatshedera lizei</i>
fir, alpine	<i>Abies lasiocarpa</i>
fir, balsam	<i>Abies balsamea</i>
fir, fraser	<i>Abies fraseri</i>
fir, grand	<i>Abies grandis</i>
fir, Vietch	<i>Abies veitchi</i>
fir, white	<i>Abies concolor</i>
firethorn	<i>Pyracantha, fortuneana</i>
firethorn, formosa	<i>Pyracantha skoidzumi</i>
firethorn, scarlet	<i>Pyracantha coccinea</i>
forsythia, border	<i>Forsythia intermedia</i>
geum	<i>Geum quellyon</i>
gardenia	<i>Gardenia jasminoides</i>
gazania, trailing	<i>Gazania rigens leucolaena</i>
geranium (Pelargonium)	<i>Pelargonium hortorum</i>
geum	<i>Geum quellyon</i>
ginkgo	<i>Ginkgo biloba</i>
garden gladiolus	<i>Gladiolus hortulanus</i>
goldenrain tree	<i>Koelreuteria paniculata</i>
heavenly bamboo (Nandina)	<i>Nandina domestica</i>
hibiscus, Chinese	<i>Hibiscus rosa-sinesis</i>
holly, Chinese	<i>Ilex cornuta</i>
holly, English	<i>Ilex aquifolium</i>
holly, Japanese	<i>Ilex crenata</i>
honeysuckle, Japanese	<i>Lonicera japonica</i>
honeysuckle, Mexican	<i>Justicia spicigera</i>
hopseedbush, clammy	<i>Dodonaea viscosa</i>
ice plant	<i>Mesembryanthemum crystallinum</i>
(See precautions for ornamental plantings)	
ice plant, largeleaf	<i>Carpobrutus edulis</i>
(See precautions for ornamental plantings)	
impatiens (Busy lizzie)	<i>Impatiens wallerana</i>
iris, bearded	<i>Iris</i> spp.
ivy, Algerian	<i>Hedera canariensis</i>
ivy, English	<i>Hedera helix</i>
Jerseytea, redroot	<i>Ceanothus americanus</i>
juniper	<i>Juniperus</i> spp.
kumquat	<i>Fortunella</i> spp.
laurel, mountain	<i>Kalmia latifolia</i>
laurelcherry, Carolina	<i>Prunus caroliniana</i>
laurelcherry, English	<i>Prunus laurocerasus</i>
leucothoe, coast	<i>Leucothoe axillaris</i>
leucothoe, drooping	<i>Leucothoe fontanesiana</i>
lilac, common	<i>Syringa vulgaris</i>
lily, plantain	<i>Hosta</i> spp.

lilyturf, bigblue	<i>Liriope muscari</i>
lily-of-the-Nile	<i>Agapanthus africanus</i>
linden, little leaf	<i>Tilia cordata</i>
magnolia, Southern	<i>Magnolia grandiflora</i>
manzanita, Stanford	<i>Arctostaphylos stanfordiana</i>
maple	<i>Acer</i> spp.
marigold	<i>Tagetes</i> spp.
mockorange	<i>Philadelphus</i> spp.
moss, rose	<i>Portulaca grandiflora</i>
myoporum, prostrate	<i>Myoporum parvifolium</i>
myrtle, true	<i>Myrtus communis</i>
oak <i>Quercus</i> spp.	
oleander	<i>Nerium oleander</i>
orange, ornamental	<i>Citrus</i> spp.
Oregon grape	<i>Mahonia aquifolium</i>
osmanthus, holly-leaf	<i>Osmanthus heterophyllus</i>
Palo Verde, blue	<i>Cercidium floridum</i>
pansy	<i>Viola wittrockiana</i>
pear	<i>Pyrus communis</i>
pecan, ornamental	<i>Carya</i> spp.
periwinkle, bigleaf	<i>Vinca major</i>
periwinkle, dwarf	<i>Vinca minor</i>
petunia	<i>Petunia</i> spp.
photinia	<i>Photinia fraseri</i>
pine	<i>Pinus</i> spp.
pittosporum	<i>Pittosporum</i> spp.
privet, amur	<i>Ligustrum amurense</i>
privet, glossy	<i>Ligustrum lucidum</i>
privet, golden	<i>Ligustrum vicaryi</i>
privet, Japanese	<i>Ligustrum japonicum</i>
protea	<i>Protea neriifolia</i>
ranunculus, Persian	<i>Ranunculus asiaticus</i>
redbud	<i>Cercis canadensis</i>
redcedar, eastern	<i>Juniperus virginiana</i>
redcedar, western	<i>Thuja plicata</i>
redwood, coast	<i>Sequoia sempervirens</i>
rhamphiolepis (India hawthorn)	<i>Rhamphiolepis indica</i>
rhododendron	<i>Rhododendron</i> spp.
rose	<i>Rosa</i> spp.
rose-of-Sharon (<i>Shrubalthea</i>)	<i>Hibiscus syriacus</i>
Russian olive	<i>Elaeagnus angustifolia</i>
sage	<i>Salvia</i> spp.
shrimp plant	<i>Justicia brandegeana</i>
snapdragon	<i>Antirrhinum majus</i>
sotol, desert spoon	<i>Dasylicon wheeleri</i>
spruce, black	<i>Picea mariana</i>
spruce, Colorado	<i>Picea pungens</i>
spruce, Englemann	<i>Picea englemanni</i>
spruce, Norway	<i>Picea abies</i>
spruce, white	<i>Picea glauca</i>
star jasmine, Chinese	<i>Trachelospermum jasminoides</i>
stonecrop	<i>Sedum brevifolium</i>
sumac, African	<i>Rhus lancea</i>
sweetgum, American	<i>Liquidambar styraciflua</i>

sweet William	<i>Dianthus barbatus</i>
tobira	<i>Pittosporum tobira</i>
trumpet vine, violet	<i>Clytostoma callistegioides</i>
viburnum, Laurustinus	<i>Viburnum tinus</i>
virburnum, Sandankwa	<i>Virburnum suspensum</i>
weigela, oldfashioned	<i>Weigela florida</i>
wintercreeper	<i>Euonymus fortunei</i>
xylosma, Japanese	<i>Xylosma congestum</i>
yarrow	<i>Achillea</i> spp.
yaupon	<i>Ilex vomitoria</i>
yew <i>Taxus media</i>	
yew, Japanese	<i>Taxus cuspidata</i>
yewpine	<i>Podocarpus macrophyllus</i>
yucca, pendulous	<i>Yucca recurvifolia</i>
yucca, soap tree	<i>Yucca elata</i>
zinnia, common	<i>Zinnia elegans</i>

Surflan WDG May be Used on the Following Container-Grown Plants:

Common Name	Scientific Name
andromeda	<i>Pieris japonica</i>
arborvitae, American	<i>Thuja occidentalis</i>
arborvitae, Oriental	<i>Platycladus orientalis</i>
astilbe/false spirea	<i>Astilbe chinensis</i> and <i>A. chinensis</i> hybrids
barberry, Japanese	<i>Berberis thunbergii</i>
bellflower	<i>Campanula elatines</i>
blazing star	<i>Liatris spicata</i>
bleeding heart	<i>Dicentra spectabilis</i>
bottlebrush, lemon	<i>Callistemon citrinus</i>
boxwood, common	<i>Buxus sempervirens</i>
brush cherry	<i>Syzygium paniculata</i>
cleysera, Japanese	<i>Cleyera japonica</i>
cotoneaster, bearberry	<i>Cotoneaster dammeri</i>
cotoneaster, cranberry	<i>Cotoneaster apiculatus</i>
cotoneaster, parney	<i>Cotoneaster lacteus</i>
cotoneaster, rock	<i>Cotoneaster horizontalis</i>
crape Myrtle, common	<i>Lagerstroemia indica</i>
cryptomeria, Japanese	<i>Cryptomeria japonica</i>
cypress, Arizona	<i>Cupressus arizonica (glabra)</i>
cypress, Italian	<i>Cupressus sempervirens</i>
daylily	<i>Hemerocallis</i> spp.
dogwood, kousa	<i>Cornus kousa</i>
eastercactus	<i>Rhipsalidopsis gaertneri</i>
escallonia	<i>Escallonia exoniensis</i>
euonymus, evergreen	<i>Euonymus japonica</i>
euonymus, stringybark	<i>Euonymus fortunei</i>
fatshedera	<i>Fatshedera lizei</i>
firethorn	<i>Pyracantha, fortuneana</i>
firethorn, formosa	<i>Pyracantha skoidzumi</i>
firethorn, scarlet	<i>Pyracantha coccinea</i>
gardenia	<i>Gardenia jasminoides</i>
ginkgo	<i>Ginkgo biloba</i>
holly, Chinese	<i>Ilex cornuta</i>

holly, Japanese	<i>Ilex crenata</i>
Jerseytea, redroot	<i>Ceanothus americanus</i>
juniper	<i>Juniperus</i> spp.
kumquat	<i>Fortunella</i> spp.
lilac, common	<i>Syringa vulgaris</i>
lilyturf, bigblue	<i>Liriope muscari</i>
lily-of-the-Nile	<i>Agapanthus africanus</i>
linden, little leaf	<i>Tilia cordata</i>
mockorange	<i>Philadelphus</i> spp.
myrtle, true	<i>Myrtus communis</i>
oak <i>Quercus</i> spp.	
oleander	<i>Nerium oleander</i>
orange, ornamental	<i>Citrus</i> spp.
pecan, ornamental	<i>Carya</i> spp.
photinia	<i>Photinia fraseri</i>
pine	<i>Pinus</i> spp.
pittosporum	<i>Pittosporum</i> spp.
privet, amur	<i>Ligustrum amurense</i>
privet, glossy	<i>Ligustrum lucidum</i>
privet, golden	<i>Ligustrum vicaryi</i>
privet, Japanese	<i>Ligustrum japonicum</i>
redbud	<i>Cercis canadensis</i>
raphiolepis (India hawthorn)	<i>Raphiolepis indica</i>
rhododendron	<i>Rhododendron</i> spp.
Russian olive	<i>Elaeagnus angustifolia</i>
shrimp plant	<i>Justicia brandegeana</i>
spruce, Colorado	<i>Picea pungens</i>
sumac, African	<i>Rhus lancea</i>
sweetgum, American	<i>Liquidambar styraciflua</i>
trumpet vine, violet	<i>Clytostoma callistegioides</i>
viburnum, Laurustinus	<i>Viburnum tinus</i>
wintercreeper	<i>Euonymus fortunei</i>
yaupon	<i>Ilex vomitoria</i>
yucca, soaptree	<i>Yucca elata</i>

Surflan WDG May be Used on the Following Field Grown Fruit Plant Nursery Liners†:

almond	grapefruit	pear
apple	kiwi	pecan
apricot	lemon	pistachio
avocado	macadamia nut	plum
cherry	nectarine	pomegranate
fig	olive	prune
filbert	orange	walnut, English
grape		

Small Fruits:

blackberry	currant	gooseberry
blueberry	dewberry	loganberry
boysenberry	elderberry	raspberry

† Plants transplanted for additional growth before transplanting to final growing location.

Tank Mix Combinations

Tank mix combinations of Surflan WDG plus Roundup, and many other labeled herbicides may be used to control undesirable vegetation in ornamental areas. Surflan WDG may also be tank mixed with Gallery* herbicide (California registration pending) and applied preemergence to broaden the spectrum of broadleaf weed control in ornamental areas. Applied as directed, these Surflan WDG tank mixes will provide control of susceptible weed species listed on the respective labels. Refer to tank mix product labels for specific use directions, precautions and limitations before use.

Surflan WDG plus Roundup: Tank mix combinations of Surflan WDG plus Roundup are recommended to control existing undesirable vegetation. Applied as directed, Surflan WDG plus Roundup will provide postemergence control of susceptible weed species listed on the label for Roundup and residual preemergence control of susceptible weed species listed on the label for Surflan WDG. Refer to the label for Roundup for specific use directions, precautions and limitations before use.

Precautions:

Do not apply sprays containing Roundup over the top of ornamental plants.

Extreme care must be exercised to prevent contact of sprays containing Roundup with foliage and stems of turfgrasses, trees, shrubs, or other desirable vegetation since severe damage or death may result.

Note: If spraying with Roundup in areas adjacent to desirable plants, use a shield to prevent spray from contacting foliage and stems of desirable plants.

Ornamental Bulbs

Surflan WDG may be applied for control of susceptible annual weeds in ornamental bulbs, e.g., bulbous iris, daffodil (narcissus), hyacinth and tulip. Apply Surflan WDG to the soil surface 2 to 4 weeks after planting, but prior to the emergence of annual weeds. For fall planted bulbs, apply Surflan WDG again in late winter or early spring to weed-free soil surfaces.

Special Use Precautions:

Do not apply to tulip plants that have emerged to a height greater than 3/4 inch.

Do not apply to gladioli corms prior to emergence or less than one inch in diameter.

Broadcast Application Rates

Time of Application	Soil Texture	Surflan WDG		Minimum Time Between Applications (months)	Total Amount Allowed Per Year (lb/acre)
		(lb/acre)	(oz/1200 sq ft)		
Fall	Coarse	0.88	0.4	3	1.75
Fall	Medium and Fine	1.75	0.8	3	2.65
Feb. - March	All Soil Textures	0.88	0.4	3	2.65

Greenhouse Areas

Surflan WDG may be applied to drainage areas under benches in open greenhouse-type structures. Do not apply in enclosed greenhouses or in enclosed shadehouse-type structures. Do not apply within three weeks prior to enclosure in greenhouse-type structures.

Christmas Tree Plantations

Surflan WDG Alone

Apply Surflan WDG as a directed spray to the soil surface or as an overtop spray to established plantings of field grown Christmas tree species, including fir (*Abies* spp.), pine (*Pinus* spp.), and spruce (*Picea*

spp.). Do not apply to Douglas-fir (*Pseudotsuga menziesii*). Do not apply to seedbeds or seedling transplant beds. Apply only to established plantings. Established plants are defined as those that have been transplanted into their final growing location for a sufficient period of time to allow the soil to be firmly settled around the roots from packing and rainfall or irrigation. Follow all instructions provided in the "General Information" section of this label.

Broadcast Application Rates

Length of Control	Surflan WDG		Minimum Time Between Applications (months)	Total Amount Allowed Per Year (lb/acre)
	(lb/acre)	(oz/1200 sq ft)		
2 - 4 months	2.4	1	2	9.4
4 - 8 months	4.7	2	2	9.4

Tank Mix Combinations

Tank mix combinations of Surflan WDG plus other labeled herbicides may be used as directed or overtop sprays in established Christmas tree plantings. When applied according to use directions, these tank mixes will provide control of susceptible weed species listed on the respective product labels. Refer to tank mix product labels for specific use directions, precautions and limitations before use.

Surflan WDG plus Roundup: Apply tank mix combinations of Surflan WDG plus Roundup only as directed sprays in Christmas tree plantings. When applied according to use directions, Surflan WDG plus Roundup will provide postemergence control of susceptible weed species listed on the Roundup label and residual preemergence control of susceptible weed species listed on the label for Surflan WDG. Refer to the Roundup label for specific use directions, precautions and limitations before use.

Precautions:

Do not apply sprays containing Roundup over the top of Christmas tree plantings. Extreme care must be exercised to avoid contact of spray containing Roundup with foliage and stems of Christmas trees or severe damage or death may result.

Noncropland Areas and Industrial Sites

Noncropland Areas -- Tank Mix Combinations

Tank mix combinations of Surflan WDG plus Roundup and many other labeled herbicides may be used to control undesirable vegetation in noncropland areas. When applied according to use directions, these tank mixes will provide control of susceptible weed species listed on the respective product labels. Refer to tank mix product labels for specific use directions, precautions and limitations before use.

Length of Control	Surflan WDG		Minimum Time Between Applications (months)	Total Amount Allowed Per Year (lb/acre)
	(lb/acre)	(oz/1000 sq ft)		
2 - 4 months	2.4	1	2	7
4 - 8 months	4.7	2	4	14
8 - 12 months	7.1	3	8	14

Industrial Sites -- Tank Mix Combinations

Tank mix combinations of Surflan WDG plus Roundup, Spike and many other labeled herbicides may be used as overtop sprays to control existing vegetation on industrial sites such as utility substations,

highway guard rails, sign posts and delineators. When applied according to use directions, these tank mixes will provide control of susceptible weed species listed on the respective product labels. Refer to tank mix product labels for specific use directions, precautions and limitation before use.

Warm Season Turfgrasses

Surflan WDG may be applied as a preemergence treatment for control of annual grasses and certain broadleaf weeds in established warm season turf including bahiagrass, bermudagrass, buffalograss, centipedegrass, St. Augustinegrass and zoysiagrass or established tall fescue growing in warm season areas. Established turf is defined as a dense turf having a well-anchored root system and healthy, vigorous top growth. Surflan WDG may be tank mixed with Gallery herbicide (California registration pending) and applied preemergence to broaden the spectrum of broadleaf weed control in warm season turf. Refer to the label for Gallery herbicide for specific use directions, precautions, and limitations before use.

Successful preemergence control of weeds listed on this label requires that Surflan WDG be applied prior to weed germination and be activated by at least one-half (1/2) inch of rainfall or irrigation within 21 days of application.

Special Use Precautions:

To avoid possible injury, do not apply Surflan WDG to:

- Cool season turfgrass species.
- Golf course putting greens or tees or lawns containing dichondra or cool season turfgrass species.
- Newly sprigged or sodded areas of bermudagrass, St. Augustinegrass, centipedegrass, or zoysiagrass until these turfs are well-established and have well-anchored root systems.
- Newly hydromulched areas of bermudagrass until such areas are well-established.
- Bermudagrass variety "Sun Turf" when tank mixed with atrazine.

Surflan WDG will not control emerged weeds.

Any cultural practices that disturb the soil, such as aerification or verticutting, should be done prior to application of Surflan WDG.

Surflan WDG may injure turf that is not well-established or is stressed or weakened due to unfavorable winter climatic conditions, drought, nematodes, or other factors which damage or weaken turf root systems. Apply Surflan WDG only to healthy, well-established turf that has a well-anchored root system.

Use Surflan WDG only as a part of a total turf management program that includes good fertilization practices.

Do not apply Surflan WDG in the spring or early summer to tall fescue turfgrass reseeded the previous fall. In such cases, apply Balan* 2.5G granular herbicide at 60 to 80 pounds per acre in early summer (Round 1) and Surflan WDG at 1.75 pounds per acre approximately eight weeks later (Round 2). Do not apply Surflan WDG at the single application rate (2.4 pounds per acre) to established tall fescue; in such cases, apply 1.75 pounds per acre of Surflan WDG in an initial application, followed by a second application of 1.75 pounds per acre 8 to 10 weeks later.

In bermudagrass areas that have been overseeded with winter grasses, a spring application of Surflan WDG will thin the overseeded grasses.

Annual Grasses Controlled by Surflan WDG**Summer Annuals:**

Common Name	Scientific Name
barnyardgrass (watergrass)	<i>Echinochloa crus-galli</i>
crabgrass, large	<i>Digitaria sanguinalis</i>
crabgrass, smooth	<i>Digitaria ischaemum</i>
crabgrass	<i>Digitaria</i> spp.
crowfootgrass	<i>Dactyloctenium aegyptium</i>
foxtail, bristlegrass	<i>Setaria magna</i>
foxtail, giant	<i>Setaria faberi</i>
foxtail, green (pigeongrass)	<i>Setaria viridis</i>
foxtail, robust	<i>Setaria robusta</i>
foxtail, yellow	<i>Setaria glauca</i>
goosegrass (silver crabgrass)	<i>Eleusine indica</i>
Johnsongrass (seedling only)	<i>Sorghum halepense</i>
ryegrass, Italian	<i>Lolium multiflorum</i>
sandbur, field	<i>Cenchrus incertus</i>

Winter Annuals:

Common Name	Scientific Name
bluegrass, annual	<i>Poa annua</i>

Annual Broadleaf Weeds Controlled by Surflan WDG**Summer Annuals:**

Common Name	Scientific Name
carpetweed	<i>Mollugo verticillata</i>
knotweed, prostrate	<i>Polygonum aviculare</i>
purslane, common	<i>Portulaca oleracea</i>

Winter Annuals:

Common Name	Scientific Name
chickweed, common	<i>Stellaria media</i>
henbit	<i>Lamium amplexicaule</i>

Broadleaf Weeds Suppressed by Surflan WDG

Common Name	Scientific Name
groundsel, common	<i>Senecio vulgaris</i>
spurge, prostrate	<i>Euphorbia humistrata</i>
woodsorrel, yellow	<i>Oxalis stricta</i>

Application Rates, Frequency and Timing of Application

Surflan WDG can be applied in the spring for summer annual grass and broadleaf weed control, and in the fall for annual bluegrass (*Poa annua*) and winter annual broadleaf weed control.

Broadcast Application Rates (Warm Season Turfgrasses)

Use Area	Surflan WDG		Minimum Time Between Applications (months)	Total Amount Allowed Per Year (lb/acre)
	(lb/acre)	(fl oz/1200 sq ft)		
All, except Florida	1.75	0.8	3	7
Florida	2.4	1	3	7
Florida	1.75	0.8	3	5.3

1. Summer Annual Grasses and Broadleaf Weeds

Single Application Program: Apply 2.4 pounds per acre of Surflan WDG per acre in late winter or early spring, prior to the onset of conditions favorable for annual weed germination.

Split Application Program: As an alternative to a single application program, Surflan WDG may be applied in a split application. This program is desirable when the initial application is made well in advance of weed germination and where weed control is desired for a longer period of time. Apply 1.75 pounds per acre of Surflan WDG in an initial application, followed by a second application of 1.75 pounds per acre 8 to 10 weeks later.

The second treatment of the split application may follow application of a different preemergence grass herbicide in place of the initial Surflan WDG application.

2. Annual Bluegrass (*Poa annua*) and Winter Annual Broadleaf Weeds

In areas of heavy annual bluegrass infestation, its elimination will result in temporary thinning of turfgrass cover. Proper fertilization, irrigation and soil incorporated reseeding should be employed to speed the restoration of desirable turfgrass cover in areas previously occupied by annual bluegrass (See section on reseeding).

Apply Surflan WDG as a preemergence treatment in late summer or early fall, prior to the expected germination period for annual bluegrass and winter annual broadleaf weeds. If annual bluegrass infestation is severe and its elimination will result in thinning of turfgrass cover, apply Surflan WDG at 1.75 pounds per acre. If thinning of turfgrass cover is not a potential problem, Surflan WDG may be applied at 2.4 pounds per acre.

Weed Control in Florida

In Florida, apply 1.75 pounds per acre of Surflan WDG three times per year, or every 90 to 100 days, in the fall, early spring, and early summer. Do not apply more than 1.75 pounds per acre of Surflan WDG in any single application.

Application Equipment

Apply Surflan WDG evenly over the turfgrass area. Avoid spray pattern skips and overlaps that may result in incomplete coverage or over-application. For best results use application equipment designed to uniformly broadcast liquid herbicides. Calibrate application equipment prior to use, according to manufacturer's directions. Check equipment frequently to make sure it is working properly and distributing spray uniformly.

Reseeding

Herbicides that control annual weeds may also affect establishment of desirable turfgrass seedlings. Reseeding should be delayed for at least 90-120 days following application of Surflan WDG. When reseeding, it is essential that proper cultural practices such as soil cultivation and seedbed preparation, irrigation and fertilization be followed. For satisfactory reseeding results following Surflan WDG use, the

seeding rate should be increased and equipment designed to place seed in full contact with soil (such as the Rogers Aero Seeder) should be employed.

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1. Refund of purchase price paid by buyer or user for product bought, or
2. Replacement of amount of product used.

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