

# Drexel

## Diuron 80

### Herbicide

For controlling many Herbaceous weeds and Annual and Perennial grasses.

#### ACTIVE INGREDIENT:

Diuron: 3-(3, 4-Dichlorophenyl)-

1,1-dimethylurea ..... 80.0%

OTHER INGREDIENTS: ..... 20.0%

TOTAL: ..... 100.0%

## KEEP OUT OF REACH OF CHILDREN

# CAUTION

See FIRST AID Below

**ATTENTION:** This product contains a chemical known to the State of California to cause cancer.

EPA Reg. No. 19713-274

EPA Est. No. 19713-MS-1<sup>A</sup>

EPA Est. No. 34704-MS-1<sup>B</sup>

Net Contents: \_\_\_\_\_

#### FIRST AID

##### IF SWALLOWED:

- 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 a poison control center or doctor.
- Do not give anything by mouth to an unconscious or convulsing person.

##### IF IN EYES:

- Hold eye open and rinse slowly and gently with water for 15 to 20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.

##### IF ON SKIN OR CLOTHING:

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15 to 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.

#### PRECAUTIONARY STATEMENTS

##### Hazards to Humans and Domestic Animals

**CAUTION:** Causes eye irritation. May irritate nose, throat and skin. Avoid breathing dust or spray mist. Avoid contact with skin, eyes and clothing.

##### PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category A on an EPA chemical-resistance category selection chart.

**Applicators and other handlers must wear:** Long-sleeved shirt and long pants, chemical-resistant gloves made of any waterproof material such as polyethylene or polyvinyl chloride, and shoes plus socks.

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.

#### USER SAFETY RECOMMENDATIONS

**Users should:** 1) Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. 2) Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. 3) 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.

#### 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. Cover or incorporate spills.

#### GENERAL INFORMATION

This product is to be mixed with water and applied as a spray for selective control of weeds in certain crops and for non-selective weed control on non-cropland areas. It is non-corrosive to equipment, non-flammable and non-volatile.

This product may be applied to soil prior to emergence of weeds to control susceptible weed seedlings for an extended period of time; the degree of control and duration of effect will vary with the amount of chemical applied, soil texture, rainfall and other conditions. Soils high in clay or organic matter require higher dosages than soils low in clay or organic matter to obtain equivalent herbicide performance. Moisture is required to activate the chemical; best results occur if rainfall (or sprinkler irrigation) occurs within 2 weeks of application. This product, applied pre-emergence, before emergence of crop and weeds, is an effective procedure because susceptible weeds are controlled in an early, vulnerable seedling stage before they compete with the crop. With favorable moisture conditions, this product continues to control weeds for some time as the crop becomes better able to compete. Should weed seedlings begin to break through the pre-emergence treatment in significant numbers, secondary weed control procedures should be implemented; these include cultivation and post-emergence herbicide application.

This product may also be used to control emerged weeds. Results vary with rate applied and environmental conditions; best results are obtained on succulent weeds growing under conditions of high humidity and temperatures of 70°F or higher. Addition of a non-ionic surfactant to the spray (where recommended) increases contact effects of this product.

This product may be used as a directed post-emergence application where spray nozzles are adjusted so that weeds are sprayed, but the crop is not on the following crops: Artichokes, Corn (field), Cotton, Sorghum (grain), Sugarcane and established plantings of Apples, Bananas, Blueberries, Caneberries, Citrus, Gooseberries, Filberts, Grapes, Macadamia nuts, Olives, Papayas, Peaches, Pears, Pecans, Plantains, Walnuts and certain Tree plantings.

Manufactured By:

**Drexel Chemical Company**

P.O. BOX 13327, MEMPHIS, TN 38113-0327

**SINCE 1972**

Under specified conditions (see *"DIRECTIONS FOR USE"*), this product without surfactant may be applied over the top of Alfalfa (established, dormant or semi-dormant), Asparagus (established), Birdsfoot trefoil (established, dormant), Grass seed crops (established), Oats, Pineapple, Plumous fern (established, mowed), Red clover (established, dormant), Sugarcane and Wheat.

Weed species vary in susceptibility to this product and they may be more difficult to control when under stress. Combinations of this product with other herbicides (as registered) increase the number of species controlled; consult labels of the companion products for this and other information.

Since the effect of this product varies with soils, uniformity of application and environmental conditions, it is suggested that growers limit their first use to small areas. Observe all precautions and limitations on labeling of all products used in mixtures.

**IMPORTANT:** Injury to or loss of desirable trees or other plants may result from failure to observe the following: Do not apply (except as recommended for crop use), or drain or flush equipment on or near desirable trees or other plants or on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots. Do not use on home plantings of trees, shrubs or herbaceous plants, nor on lawns, walks, driveways, tennis courts or similar areas. Prevent drift of dry powder or spray to desirable plants. Do not contaminate any body of water. Do not mix/load or use near wells including abandoned wells, drainage wells and sinkholes. Avoid storage of pesticides near well sites. Keep from contact with fertilizers, insecticides, fungicides and seeds. Calibrate sprayers only with clean water away from well site. Do not apply this product through any type of irrigation system. Thoroughly clean all traces of this product from application equipment immediately after use. Flush tank, pump, hoses and boom with several changes of water after removing nozzle tips and screens (clean these parts separately).

#### DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

#### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard (WPS), 40 CFR part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, 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 (REI). The requirements in this box only apply to uses of this product that are covered by the WPS. Do not enter or allow worker entry into treated areas during the REI of 12 hours.

PPE required for early entry to treated areas that is permitted under the WPS and that involves contact with anything that has been treated, such as plants, soil or water is: Coveralls, chemical-resistant gloves made of any waterproof material and 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 (WPS) 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. Keep unprotected persons and pets out of treated areas until sprays have dried.

Non-crop weed control is not within the scope of the WPS.

This product should be used only in accordance with recommendations on this label. Manufacturer will not be responsible for losses or damages resulting from use of this product in any manner not specifically recommended by the Manufacturer. User assumes all risks associated with such non-recommended use.

**SELECTIVE USE IN CROPS:** Pre-emergence herbicide selectively controls Annual weeds such as:

CONTROL		
0.75 to 1 lb. per Acre	1.5 to 2 lbs. per Acre	
Barnyardgrass (Watergrass)	Amsinckia (Fiddleneck)	Knawel
Crabgrass	Annual bluegrass	Pennycress
Lambsquarters	Annual groundcherry	Rattail fescue
Pigweed	Annual morningglory	Red sprangletop
Purslane	Annual sweet vernalgrass	Shepherdspurse
Ragweed	Chickweed	Tansymustard
	Corn spurry	Velvetgrass
	Dogfennel	Wild buckwheat
	Foxtail	Wild lettuce
	Gromwell	Wild mustard

CONTROL		
2 to 6 lbs. per Acre		
Ageratum	Johnsongrass (Seedling)	Pokeweed
Annual lovegrass	Kyllinger (Kyllinga)	Rabbit tobacco
Annual ryegrass	Marigold	Ricegrass
Annual smartweed	Mexican clover	Sandbur
Annual sowthistle	Orchardgrass	Spanishneedles
Corn speedwell	Peppergrass	Velvetleaf (Buttonweed)
Dayflower	Pineappleweed	Wild radish
Flora's paintbrush		
Hawksbeard		

PARTIAL CONTROL		
1 lb. per Acre	4 lbs. per Acre	8 to 10 lbs. per Acre
Annual morningglory	Horsenettle	Guineagrass
Cocklebur	Quackgrass	Maidencane
Prickly sida (Teaweed)		Pangolagrass
Sesbania		
Sicklepod		

#### APPLICATION DIRECTIONS

**AERIAL APPLICATION:** For Alfalfa, Asparagus, Barley (Winter), Cotton (pre-plant or pre-emergence only), Grass seed crops, Pineapple, Sugarcane and Wheat (Winter), application may be made by aircraft at 5 to 10 gallons of water per acre. Avoid overlapping of spray swath and avoid application under conditions where excessive drift may occur. Where land is bedded, make application parallel to rows.

#### 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 of 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 outermost nozzles on the boom must not exceed three-fourths 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 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 INVERSIONS"* sections of this label).

#### Controlling Droplet Size

**Volume**—Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce 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 backward, 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 three-fourths of the wingspan or rotary 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 crosswind, 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 to 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).

**GROUND APPLICATION:** Use a boom power sprayer properly calibrated to a constant speed and rate of delivery. Openings in screen should be 50-mesh or larger. Continuous agitation in the spray tank is required to keep the material in suspension. Agitate by mechanical or hydraulic means. If bypass or return line is used, it should terminate at the bottom of the tank to minimize foaming. Avoid overlapping and shut off spray booms while starting, turning, slowing or stopping, or injury to crop may result.

**PRE-EMERGENCE:** Use sufficient spray volume and pressure to uniformly distribute the spray solution over treated soil. Pre-emergence weed control will be reduced on high organic matter soils such as peat or muck.

**POST-EMERGENCE:** For post-emergence application, use sufficient volume for thorough coverage of weed foliage. For selective applications and applications near sensitive crops, use low spray pressure to keep spray drift to a minimum. This product, at recommended rates, controls seedling Annual weeds such as Annual morningglory, Barnyardgrass (Watergrass), Crabgrass, Crowfoot, Goosegrass, Pigweed and Purslane. Addition of a surfactant to the spray (where recommended) increases contact effects of this product. Best results are obtained on succulent weeds growing under conditions of high humidity and temperatures of 70°F or higher.

**SPRAY PREPARATION:** Mix proper amount of this product into necessary volume of water. Where use of a surfactant is recommended, dilute with 10 parts of water and add as last ingredient to a nearly full tank.

**REPLANTING:** Unless otherwise directed, do not replant treated areas to any crop within 2 years after last application, as injury to subsequent crops may result.

**RATES:** All rates of this product are expressed as broadcast rates, for band treatment use proportionately less. For example, use one-third of the broadcast rate when treating a 14-inch band where row spacing is 42 inches. Where a range of dosages is given, use the lower rate on Coarse textured soils low in clay or organic matter and the higher rate on Fine textured soils high in clay or organic matter. For post-emergence application, use the lower rate on smaller weeds and the higher rate on larger weeds.

**SOIL LIMITATIONS:** Crop injury may result from failure to observe the following:

Unless otherwise directed, do not use on Sand, Loamy sand or Gravelly soils or exposed subsoil, nor on Pecans where organic matter is less than 0.5%, nor on Alfalfa, Apples, Artichokes, Barley (Winter), Citrus, Cotton, Grapes, Oats, Olives, Papayas, Peaches, Pears, Sorghum, Sugarcane, Walnuts and Winter wheat where organic matter is less than 1%, nor on Blueberries, Birdsfoot trefoil, Caneberries, Gooseberries, Macadamia nuts and Peppermint where organic matter is less than 2%.

#### **RECOMMENDED USES**

##### **FIELD CROPS (See Soil Limitations)**

A good seedbed must be prepared before pre-emergence use of this product, as crop injury may result if application is made to ground which is cloddy or compacted resulting in improperly planted seed. Plant seed to depth specified. Unless otherwise directed, surface of the soil should not be cultivated or disturbed after application of this product and before emergence of the crop, as weed control may

be reduced and crop injury may result. However, if moisture is insufficient to activate the herbicide, a shallow cultivation (rotary hoe preferred) should be made after emergence of crops while weeds are small enough to be controlled by mechanical means.

#### **ALFALFA**

Treat only stands established for 1 year or more. Do not apply to seedling Alfalfa nor to Alfalfa/Grass mixtures; do not apply to Alfalfa under stress from disease, insect damage, shallow root penetration (such as on shallow hard pans), or alkali spots, nor to flooded fields as crop injury may result. Do not spray on snow-covered or frozen ground.

**ID, OR, WA:** Use 1.5 to 3 pounds per acre for control of annual weeds. For control of Volunteer alfalfa, use 4 pounds per acre. Apply in Fall after Alfalfa becomes dormant, but not later than mid-December.

**CA (Dormant and Semi-Dormant Varieties):** Use 1.5 to 3 pounds per acre; for control of Volunteer alfalfa, use 4 pounds per acre. Apply in Fall or Winter after Alfalfa becomes dormant or semi-dormant, but before growth begins in the Spring. Crop injury may result if application is made to actively growing Alfalfa. For best results, apply before weeds have emerged or become established (2 inches in height or diameter). Control of established weeds is improved by applying this product with a suitable contact herbicide registered for such use. Sufficient rainfall for soil activation of this product is unlikely in CA after February 1. Treated areas may be replanted to any crop after one year from last application if rate does not exceed 2 pounds per acre.

**AZ, NV:** Use 1.5 to 3 pounds per acre; apply in Fall after Alfalfa becomes dormant but no later than January.

**Eastern CO, KS:** For control of Tansymustard, apply 1 pound per acre shortly after emergence of Mustard in the Fall or Winter; use 2 pounds per acre if weeds are 2 inches to 4 inches in height. Alternatively, if other Annual weeds are present, apply 2 to 3 pounds per acre in February or March.

**Other Areas Where Alfalfa Becomes Winter Dormant:** Use 1.5 to 3 pounds per acre (1.5 to 2 pounds per acre East of Appalachian Mountains). Apply in March or early April, but before Spring growth begins.

#### **ARTICHOKES**

**CA:** Apply 2 to 4 pounds per acre in late Fall or early Winter after the last cultivation. Apply before weeds germinate or to emerging seedlings. Direct spray to cover the area between the rows and at the base of Artichoke plants, keeping contact with crop plants at a minimum.

#### **ASPARAGUS**

Apply as a band or broadcast treatment. Do not apply to young plants during the first growing season (except as noted below), nor to newly-seeded Asparagus, nor on plants with exposed roots, as severe injury may result. Pre-emergence weed control will be reduced on soils with greater than 5% organic matter.

**Established Plantings:** On Light sandy soils and other soils low in clay or organic matter, apply 1 to 2 pounds per acre. On soils high in clay or organic matter, use 2 to 4 pounds per acre. Two applications may be used; the first application should be made before weeds become established, but no earlier than 4 weeks before spear emergence and no later than the early cutting period (if weeds are controlled into the cutting period by cultural practices, application may be delayed until immediately after the last cultivation); a second application may be made immediately following completion of harvest, provided rainfall is expected. When two applications are used in one season, do not exceed 3 pounds per acre per application. In WA (irrigated crop), apply a single treatment of 4 pounds per acre. If treatment is delayed until late Winter or early Spring, incorporation of the chemical in the top 1 to 2 inches of soil may substitute for lack of rain to activate the herbicide.

**Newly Planted Crowns—CA (San Joaquin Delta):** Make a single application of 2 to 4 pounds per acre on soils high in clay or organic matter; use the lower rate on Clay loams and the higher rate on Peat soils. Do not use on soils containing less than 2% organic matter. Soils must be settled by rainfall or irrigation prior to treatment. Do not treat crowns planted to a depth of less than 2 inches.

#### **BARLEY, WINTER**

**Western OR and Western WA:** For drill-planted Barley, make a single application of 1.5 to 2 pounds per acre as soon as possible after planting, but before emergence of Barley. Do not replant treated areas to any crop within 1 year after the last application as injury to subsequent crops may result.

#### **BIRDSFOOT TREFOIL (Lotus)**

**Western OR:** Treat only stands established for at least 1 year; do not apply to seedling Trefoil as injury may result. Make a single application of 2 pounds per acre when Trefoil is dormant (October 15 to December 15). Do not replant treated areas to any crop within 1 year after last application, as injury to subsequent crops may result.



## CORN (Field)

**Post-emergence:** Make a single application of 0.75 pound per acre in combination with non-pressure nitrogen solution. If nitrogen solution is not used, apply 1 pound per acre. Add a surfactant. Apply as a directed spray when Corn is at least 20 inches high and weeds are no taller than 3 inches. DO NOT APPLY OVER TOP OF CORN. Do not replant to any crop within 1 year after last application as injury to subsequent crops may result, except Corn, Cotton and Grain sorghum may be planted the Spring following treatment.

**Pre-emergence—AR, LA, MS and TN:** Make a single application of 0.67 to 1 pound per acre as a broadcast or band treatment after planting, but before Corn emerges. Plant Corn at least 1.5 inches deep. Do not replant treated areas to crops other than Corn or Cotton within 4 months following band treatment and 6 months following broadcast treatment, as crop injury may result.

## COTTON

During a single crop season, do not exceed the following amounts of this product per acre as injury to subsequent crops may result: 1 pound on Loamy sand, 1.5 pounds on Sandy loam, 2 pounds on Clay loam and 2.75 pounds on Clay. DO NOT SPRAY OVER THE TOP OF COTTON PLANTS. Do not apply to Sand or Loamy sand soils. Do not use on soils with less than 1% organic matter as crop injury may result. Seedling disease may weaken plants and increase the possibility of injury from the use of Trifluralin EC followed by this product. These treatments should be used only in conjunction with a standard fungicide seed treatment plus a good supplemental soil fungicide program such as Captan - PCNB mixture.

Do not use this product in pre-plant or pre-emergence applications where soil-applied organophosphate insecticides are used due to potential for severe cotton injury and possible stand loss. Do not allow livestock to graze treated Cotton.

**Pre-plant—AZ and CA:** Use this product alone or apply as a separate operation following pre-plant broadcast treatment with Trifluralin EC (incorporated according to directions on product label). Apply this product as a broadcast spray after beds are formed, pre-irrigated and final seedbeds prepared. Prior to planting, drag-off the tops of the beds and plant in moist soil not treated with this product. Treated soil is returned to the bed after planting when irrigation furrows are reformed after Cotton has emerged. If more than two furrowing-out operations are made prior to lay-by or deep furrows are made early, weed control may be reduced in furrow bottoms. Use at the following rates:

**This Product Alone (Pre-plant):** 1 to 2.5 pounds per acre.

**This Product Following Trifluralin EC:**

Soil Texture	Rate Per Acre	
	Trifluralin EC	This Product
Sandy loam, Loam, Silt loam, Silt	1 pt.	0.67 to 1 lb.
Sandy clay loam, Clay loam, Silty clay loam, Sandy clay, Clay	1.5 pts.	1 to 1.25 lbs.

**Pre-Plant (Except AZ and CA):** This product may be used for burndown of existing annual weeds and residual control of weeds prior to planting cotton. Complete any planned tillage prior to application. Apply herbicide treatments before weeds germinate or before weed seedlings are more than 2 inches tall. If weeds are emerged prior to application, the addition of a non-ionic surfactant is recommended. Tillage following application should be avoided to prevent incorporation of the herbicide into the cotton seed germination zone which may result in crop injury. Dragging treated soil from beds will concentrate the herbicide in middles and reduce residual weed control on the beds. Apply this product at 1 to 2 pounds per acre from 15 to 45 days prior to anticipated planting. Refer to the table below for use rates in pre-plant applications. Do not exceed suggested use rates for individual soil textures shown in the table below. If less than the maximum rate of application for a given soil is applied pre-plant, subsequent pre-emergence applications of this product may be made. However, the total combined application rate for this product applied pre-plant and pre-emergence may not exceed the maximum suggested use rate for either application method.

This Product Alone	
Soil Texture	Rate Per Acre
Sandy loam, Loam, Silt loam, Silt	1 lb.
Sandy clay loam, Clay loam, Silty clay loam, Sandy clay	1.25 lbs.
Silty clay, Clay	2 lbs.

Pre-emergence application of herbicides with a similar mode of action to that of diuron following pre-plant application of this product may result in cotton injury. When pre-plant applications of this product are followed by pre-emergence applications of herbicides with a similar mode of action, e.g., Meturon®, Cotoran® or other products containing fluometuron, the product containing fluometuron should be used at the minimum rate of application for the soil under consideration in order to reduce potential for crop injury. This is most critical where applications of this product are made less than 30 days pre-plant, on Coarse textured soils, and on soils low in organic matter. The risk of

injury from pre-plant applications of this product is reduced where substantial rainfall (> 0.5 inches) occurs between application and planting. Read and follow any additional precautions on this label when using this product for pre-plant weed control in cotton.

**Pre-Plant Tank Mixes:** When emerged weeds taller than 2 inches or weeds not listed on this label are present, this product may be tank-mixed with other products labeled for pre-plant applications in cotton, including Boa™, Glyphosate Original, Gramoxone® Extra, Roundup® Ultra, and Touchdown®. The addition of dry spray grade ammonium sulfate at the rate of 2.0% w/w (17 pounds per 100 gallons finished spray solution) is suggested to enhance performance of this product plus glyphosate tank mixes.

**Replanting:** Only Cotton and Corn may be planted within 6 months of pre-plant applications of this product. To avoid crop injury following replanting, avoid disturbing the original bed.

**Pre-emergence—Except AZ, CA:** Use this product alone or apply as a separate operation following pre-plant treatment with Trifluralin EC. Apply this product after planting, but before Cotton emerges. Do not treat Cotton in deep furrows as crop injury may result. Use only where Cotton is planted on flat or raised seedbeds. Shallow incorporation (no deeper than 0.25 inch) with a rotary hoe or similar equipment following planting usually improves results especially during dry weather. A wide press wheel should be used on the planter to provide a level seedbed for subsequent early season post-emergence treatments. If moisture is insufficient to activate this product or if soil becomes crusted before crop emerges, a shallow rotary hoeing (no deeper than 0.25 inch) should be made before weeds become established.

**This Product Alone:** Make a single application as a broadcast or band spray using the following broadcast rates; for band treatment, use proportionately less.

Soil Texture	Lbs. of This Product Per Acre
Sandy loam, Loam, Silt loam, Silt	1
Sandy clay loam, Clay loam, Silty clay loam, Sandy clay	1.25
Silty clay, Clay	2

**This Product Following Trifluralin EC Pre-plant:** Apply Trifluralin EC prior to planting as a broadcast or band treatment; incorporate according to directions on Trifluralin EC label. As a separate operation, apply this product after planting, but before Cotton emerges. Use the following broadcast rates. For band treatment, use proportionately less.

Soil Texture	Rate Per Acre	
	Pre-plant Trifluralin EC	Pre-emergence This Product
Sandy loam, Loam, Silt loam, Silt	1 pt.	1 lb.
Sandy clay loam, Clay loam, Silty clay loam, Sandy clay, Silty clay, Clay	1.5 pts.	1.25 to 2 lbs.

**Post-emergence:** Apply only as a directed spray to cover weed foliage; adjust nozzles to minimize contact of Cotton leaves with spray or drift or crop injury may result. Applications may also be made in hooded/shielded sprayers.

**Early Season:** Apply when Cotton is at least 6 inches tall and when weeds are actively growing and do not exceed 2 inches in height. Apply as a band or broadcast treatment at the following rates. Two applications may be made if needed.

Annual Weed Problem	
Up to 2 inches tall	Rate per Acre
Cotton 6 to 8 inches	0.5 lb.
Cotton 8 to 12 inches	0.75 lb.

For control of seedling Perennial grasses such as Johnsongrass, in directed sprays and partial control of Nutsedge or when weed growth is under drought stress or over 2 inches tall add 2 to 3.5 pounds of active DSMA or 1.65 to 2 pounds active MSMA to the above spray mixture. If DSMA or MSMA is used, do not apply after first bloom. For enhanced weed control in hooded/shielded sprayer applications, add MSMA or DSMA as suggested above; or Boa, Gramoxone Extra, Glyphosate Original, Roundup Ultra, or Touchdown according to label recommendations. Consult product labels for specific recommendations and precautions for hooded sprayer applications.

**Late Season (Lay-By):** Apply 1 to 1.5 pounds per acre (1 to 2 pounds in AZ and CA) when Cotton is at least 12 inches tall (at least 20 inches tall for Pima S-2). For control of germinating weed seedlings, apply to soil beneath Cotton plants and between rows immediately after last cultivation. In irrigated Cotton, best weed control is obtained if the field is irrigated within 3 to 4 days after application, to thoroughly wet the surface of the ground over the row to carry the herbicide into the root zone of germinating weeds. Alternatively, for control of emerged Annual weeds (up to 4 inches in height) at lay-by time, make a single application in combination with a surfactant or use 0.5 to 0.75 pound of this product (plus surfactant) per acre and repeat later, if needed.

**Replanting:** If initial seeding fails to produce a stand, Cotton may be replanted in soil treated pre-emergence with this product alone or following pre-plant application of Trifluralin EC. Wherever possible, avoid disturbing original bed. If necessary to rework soil before replanting, use shallow cultivation such as disking; do not relist nor move soil into the original drill area. Plant seed at least 1 inch deep. Do not re-treat field with a second pre-plant or pre-emergence application during the same crop year, as injury to the crop may result.

#### Subsequent crops:

This Product - Type of Application	Crops That May Follow Treated Cotton
Band pre-emergence -OR- post-emergence	Any crop 4 months after last application
Band pre-emergence plus post-emergence -OR- Broadcast pre-emergence (and pre-plant) -OR- Broadcast pre-emergence plus band post-emergence	Corn, Cotton, Grain sorghums (not Sorghos or Forage sorghums nor Grass sorghums) or Soybeans the next Spring. Do not replant treated areas to any other crop within 1 year after last application, as injury to subsequent crops may result.
Broadcast post-emergence (lay-by)	Corn, Cotton, Grain sorghums (not Sorghos or Forage sorghums nor Grass sorghums) the next Spring. Do not replant treated areas to any other crop within one year after last application, as injury to subsequent crops may result.

For subsequent crops in fields where Trifluralin EC is used, follow instructions on Trifluralin EC product label(s).

#### GRASS SEED CROPS (Perennial Except Where Specifically Indicated)

Except as noted, apply only to established plantings at least 1 year old.

**CO, KS, NM and OK:** On Sand bluestem, Side-oats grama and Switchgrass, apply 2 to 3 pounds per acre during the dormant period shortly before weed seedlings emerge. Do not apply after crop begins growth in the Spring, as crop injury may result. In fields where ash residues have accumulated from burning straw, use 3 pounds per acre; spread unburned chaff or straw with a harrow or chopper before application.

**Eastern OR, Eastern WA:** On Perennial bluegrass and Fescue apply 1 to 3 pounds per acre as broadcast in enough diluent to get even distribution. Apply in Spring before rapid growth of the crop begins and when the Windgrass is still small (1- to 4- leaf). DO NOT use on Coarse (sand) textured soils.

**Western OR, Western WA:** On Alta fescue, Astoria bentgrass, Highland bentgrass, Kentucky bluegrass (Merion bluegrass) and Orchardgrass, apply 2 to 4 pounds per acre between October 1 and November 15. In fields where ash residues have accumulated from burning straw, use 3 to 4 pounds per acre; spread unburned chaff or straw with a harrow or chopper before application. If Perennial velvetgrass (*Holcus lanatus*) is a problem, use 4 pounds per acre. For best results, apply as soon as possible after Fall rains start. Established weeds (beyond 2- to 4-leaf stage) should be removed prior to treatment.

Well established vigorous stands of Spring-planted Alta fescue, Kentucky bluegrass and Orchardgrass may be treated the following Fall provided the crop is planted before April 1 and treatment is not applied before October 15; use 2 pounds per acre.

**OR, WA:** Apply in the Fall to Perennial ryegrass at the rate of 1 to 2 pounds per acre and to Tall fescue at the rate of 2 to 4 pounds per acre. Use a sufficient volume of water, a minimum of 25 gallons per acre, for thorough coverage of weed foliage. For best results, make applications at the onset of the Fall rains and before weeds have become established (typically October 1 through November 15). Established weeds beyond the 2- to 4-leaf stage should be removed prior to treatment. Apply only to well established, vigorous stands. Do not apply to Perennial ryegrass stands less than 1 year old. Use mechanical agitation and avoid overlap of spray patterns. Weed control efficacy may be reduced in fields where ash residues have accumulated from burning straw.

**Annual Ryegrass for the Creation of Rows:** Apply 1 to 2 pounds per acre as a directed or shielded spray so the intended crop row area is not treated. These applications should be made where excessive populations of annual Ryegrass are anticipated to volunteer from previous crops. Applications can be made as a directed/shielded spray during seeding or after emergence of Annual ryegrass. These applications generally will occur between October 1 and January 15. This product is most effective when applied before Annual ryegrass volunteer plants have more than 2 leaves. If larger plants are to be treated, addition of a labeled post-emergence herbicide will provide more effective control. Adjust nozzle heights and spacing to allow the establishment of the desired row width (generally about 3 inches) and spacing (generally 9 to 12 inches). Use of low pressure nozzles, shielded nozzles, or drop nozzles to reduce spray movement into the intended crop row area is recommended.

**Fine Fescue Grass Seed Crops** (including Chewings, Creeping red and Hard fescue types): For the suppression of Rattail fescue: Apply at 1 to 2 pounds per acre on soils having at least 1% organic matter. Do not use on Sand, Loamy sand, Gravelly soils or exposed subsoils.

**Crop Stage and Application Timing:** This product is recommended for use on healthy, vigorous stands of Fine fescue. This product can be applied to stands established at least 1 year or to new plantings that have been established for at least 6 months and have a minimum of eight tillers at time of application. Apply in Fall before Grass weeds are beyond the 1- to 2-leaf stage and before Broadleaf weeds are larger than 1 to 2 inches tall or across. Use the high end of the rate range for large weeds or where weed populations are high.

Approximately 0.5 to 1 inch of rainfall or sprinkler irrigation is needed to move this product in the weed zone before weeds develop an established root system. Weeds larger than the size indicated or those having a well established root system before this product is properly activated by rainfall/irrigation may not be adequately controlled.

Weed control may be reduced by heavy straw residues or ash from field burning.

**Tank Mixes and Sequential Treatments:** This product can be applied either alone or in a program involving tank mixes and/or sequential treatments with other herbicides and adjuvants. When using a tank mix with other herbicides, use 1 to 1.5 pounds per acre unless prior experience indicates it is safe to use higher rates. Tank mixes with other herbicides can increase the risk of crop injury. When using certain tank mixes for the first time, limit use to a small area to determine safety before treating large areas.

**Use Precautions:** Do not replant treated areas to any crop within 2 years of last application, as injury to next crop may occur.

Do not apply to snow covered or frozen ground as injury to the crop or poor weed control may result.

Do not treat stands lacking in vigor due to poor fertility, environmental stress, insects, disease or damage from other herbicides.

**New Plantings (ID, OR, WA):** For use in newly planted Bentgrass, Chewings fescue, Kentucky bluegrass, Perennial ryegrass, Orchardgrass and Tall fescue. During planting operation, spray a suitable brand of activated charcoal as a 1-inch band on soil surface at a rate of 300 pounds per acre (broadcast basis; equivalent to 15 pounds per acre of crop when row spacing is 20 inches). Mount nozzles to apply directly over seed rows to prevent crop injury. Follow with this product as a single broadcast spray at a rate of 2.5 to 3 pounds per acre. Apply as soon as possible after planting, but before crops or weeds emerge and before rains or sprinkler irrigation. Fall or Spring plantings may be treated. Best results usually occur with early Fall plantings. Treatment will not control Downy brome or Wild oats.

#### PERENNIAL RYEGRASS, TALL FESCUE, KENTUCKY BLUEGRASS AND FINE FESCUE (Grown for Seed) (OR Only)

For control of certain Broadleaf weeds and Annual grasses, apply this product only to well established vigorous stands of Grasses as directed below. Use sufficient water, a minimum of 26 gallons per acre, for thorough coverage of weed foliage. For best results, make application at the onset of Fall rains and before weeds become established (typically October 1 through November 15). Weeds beyond the 2- to 4-leaf stage will usually not be controlled. Use higher rates within the range listed when treating larger weeds and heavier weed infestation. Weed control may be reduced where straw or ash residues have accumulated on the soil surface. Lack of moisture to activate the herbicide may reduce weed control. Tank mixtures or sequential treatments with other herbicides may reduce crop tolerance and increase risk of crop injury. When using this product in a tank mix or in a sequential treatment with other herbicides, do not use the maximum rates listed below unless compatibility and the potential for phytotoxicity have been evaluated. Crop tolerance may be reduced and the likelihood of crop injury may increase when crop is under stress caused by weather, diseases and insects. Do not apply this product through any type of irrigation system.

**Perennial Ryegrass (Established):** Apply 1 to 2 pounds per acre per season (October 1 through mid-January) to control Seedling grasses and Broadleaf weeds such as Annual bluegrass and others named on the product label.

**Tall Fescue (Established):** Apply 2 to 4 pounds per acre per season (October 1 through mid-January) to control Seedling grasses and Broadleaf weeds such as Rattail fescue and others named on the product label.

**Kentucky Bluegrass (Established stands East of the Cascade Mountains):** Apply 1.5 to 3 pounds per acre per season (October 1 through mid-January) for suppression of Rattail fescue and certain other Seedling grasses and Broadleaf weeds named on the product label. Downy brome is not controlled. Do not use on *Poa trivialis* grass seed varieties.

**Fine Fescue (Illiahee, Rainier, Chewings and related varieties including Hard fescue) (Established stands West of the Cascade Mountains):** Apply 1 to 2 pounds per acre for suppression of Rattail fescue and certain other Seedling grasses and Broadleaf weeds named on the product label. Make only 1 application per year. Do not use this product more than two years in succession in the same field.

## **ESTABLISHED PERENNIAL BLUEGRASS (Grown for Seed) (WA Only)**

Broadcast 0.5 to 1.2 pounds of this product per acre in enough dilutant to get even distribution. Apply in Spring before rapid growth of the Bluegrass begins and when the Windgrass is still small (1- to 4-leaf). Do not use on Coarse (Sandy) textured soils. Do not apply this product through any type of irrigation system.

## **OATS**

Do not replant treated areas to any crop within one year after last application, as injury to subsequent crops may result.

**Drill-Planted Spring Oats—ID, Eastern OR, Eastern WA:** Use in areas where average annual rainfall exceeds 16 inches. Make a single application of 1 to 1.5 pounds per acre after planting, either before or after Oats emerge, but within 6 weeks of planting. Best results are usually obtained when application is made 3 to 4 weeks after planting. Apply before weeds are 3 to 4 inches tall.

**Drill-Planted Winter Oats and Mixtures with Peas or Vetch—Western OR and Western WA:** Make a single application of 1.5 to 2 pounds per acre as soon as possible after planting, but before emergence of the crop.

**PEAS (Austrian Field) Western OR:** This product is recommended for selective control of certain weeds in Austrian field peas. Apply 1.5 to 2 pounds of this product per acre as a broadcast spray with air or ground equipment as soon as possible after planting but before crop emerges for control of weeds such as Chickweed, Shepherds-purse, Wild mustard, Fiddleneck, Lambsquarters, Pigweed and Annual bluegrass. Use lower rate on coarse-textured soils and higher rate on fine-textured soils. Do not use this product on Sand, Sandy loam, Gravelly soils or exposed subsoils or on soils having less than 1% organic matter, as crop injury may result. Do not replant treated area to another crop within one year of application. Crop injury may result if severe winter stress, disease or insect damage to the crop follows application.

## **PEPPERMINT (Pacific Northwest)**

Apply at 0.75 to 1 pound per acre on soils having 1% to 2% organic matter. Apply at 1 to 2 pounds per acre on soils having 2.1% to 3.0% organic matter. Apply at 2 to 3 pounds per acre on soils having more than 3.0% organic matter. Do not apply to stands of Mint suffering from stress due to low fertility, drought, winter injury, insects, disease or damage from other herbicides or other causes. Do not apply to snow covered or frozen ground as injury to the crop or poor weed control may result. Do not apply to Sand, Loamy sand, Gravelly soils or exposed subsoils. Do not apply to soils that have a high salt content and/or high water table or poor drainage that retards Mint root development resulting in a shallow root system. Do not apply to soils having less than 1% organic matter.

**Application Timing:** Apply this product to established stands of Mint during the late Winter dormant period or after flaming in the Spring, prior to the emergence of new growth. Do not cultivate after application.

If weeds are present at the time of application, the use of a surfactant at 0.25% v/v or crop oil concentrate at 1.0% v/v may be used to increase the performance of this product post-emergence to weeds.

**Tank Mixes and Sequential Treatments:** This product can be applied either alone or in a program involving tank mixes and/or sequential treatments with other herbicides and adjuvants, providing this product is not applied to actively growing Mint plants.

When using a tank mix with other herbicides, use the lower end of the rate range of this product unless prior experience indicates it is safe to use higher rates. Tank mixes and sequential treatments with other herbicides can increase the risk of crop injury. When using a certain tank mix or sequential treatment for the first time, limit use to a small area to determine safety before treating large areas.

## **RED CLOVER (Western OR)**

Make a single application of 2 pounds per acre on established Red clover stands (at least 9 months). Apply this product when Red clover is dormant (October 15 to December 15). Do not apply to seedling Red clover and do not replant treated area to any crop within one year after last application as injury to subsequent crops may result.

Treatment will control Annual weeds such as Bluegrass, Chickweed, Hawksbeard, Rattail fescue, Ryegrass and Velvetgrass.

## **SORGHUM—GRAIN (Southwestern States)**

Apply 0.25 to 0.5 pound per acre. Add a surfactant. Apply as a directed post-emergence broadcast or band spray after Sorghum is 15 inches tall to control weeds 2 to 4 inches in height. DO NOT SPRAY OVER TOP OF SORGHUM. Use the lower rate on Broadleaved weeds up to 2 inches tall; use the higher rate on Grasses up to 2 inches and Broadleaved weeds up to 4 inches tall. When the lower rate is used, a second application may be made, if needed, provided the amount applied in one crop year does not exceed 0.5 pound per acre. Treatment of weeds under drought stress is usually ineffective.

Do not replant treated areas to crops other than Corn or Cotton within 4 months following band treatment and 6 months following broadcast treatment, as crop injury may result.

## **SUGARCANE**

To prevent possible crop injury on new cane varieties, tolerance to this product should be determined prior to adoption as field practice. Do not treat Sugarcane growing on thinly covered subsoils or rocky areas, as crop injury may result. Temporary chlorosis of the crop may result from application over emerged cane. Application over emerged cane should be made only as directed below, without the addition of a surfactant or crop oil concentrate. To minimize chlorosis, use directed post-emergence sprays.

This product may be applied as a directed spray (including hooded and shielded spray) in combination with Boa and other formulations of paraquat. Consult the label of the tank-mix partner for rates and timings of application, restrictions and precautions.

**Pre-emergence — FL:** For high organic soils, apply 2 to 4 pounds per acre as a broadcast or band spray prior to weed emergence after planting or after harvesting plant crop (for ratoon crop).

**Post-emergence — FL:** Make 1 or 2 applications of 2 pounds per acre, as needed, by directed spray inter-row. Alternatively, for Panicum control, make up to 3 applications of 0.5 to 1 pound per acre plus surfactant as a directed spray after cane has emerged, but before Panicum exceeds 2 inches in height. Adjust nozzles to spray beneath cane plants and between rows to cover weed foliage and to minimize contact of cane leaves with spray or drift. Do not apply more than 6 pounds total per acre between planting (or ratooning) and harvest.

**Post-emergence — Hawaii:** Apply 2 to 6 pounds per acre as a broadcast spray prior to weed emergence after planting or after harvesting plant crop or ratoon crop. Sequential applications of 2 to 4 pounds per acre may be made as a broadcast spray over emerged cane or by directed spray inter-row. If weeds are emerged, add a surfactant and apply as a directed spray. Do not apply more than 3 treatments nor more than 12 pounds per acre in Hawaii between planting (or ratooning) and harvest. Treated areas may be replanted to Sugarcane or Pineapple 1 year after application.

**Post-Emergence — Puerto Rico:** Apply 4 to 8 pounds per acre as a broadcast spray prior to weed emergence after planting or after harvesting plant crop or ratoon crop. A second and third application of 2 to 4 pounds per acre may be made as a broadcast spray over emerged cane or by directed spray inter-row.

If weeds are emerged, add a surfactant and apply as a directed spray. DO NOT SPRAY OVER TOP OF CANE.

Do not apply more than 3 treatments, nor more than 10 pounds per acre between planting (or ratooning) and harvest. Treated areas may be planted to Pineapple or Sugarcane one year after last application.

**LA, TX:** Apply 3 to 3.75 pounds per acre. This product may be applied as a broadcast spray after planting and following the harvesting of Sugarcane. This product may also be applied broadcast in late Winter. Application is best when made prior to weed emergence. Apply this product as a post-directed spray immediately after the last cultivation. Direct the spray application to the base (no more than one-third of the plant height) of the Sugarcane plants. When small weeds (3 inches or less) are present at application, add a surfactant at 0.25% v/v or crop oil concentrate at 1.0% v/v to the spray mix.

**Use Precautions:** Temporary leaf yellowing may occur following application. Do not apply more than 7.5 pounds per acre broadcast per year. For band application, reduce the above broadcast rates proportionately to the width of the band using the following formula:

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \text{Broadcast Rate} = \text{Band Rate Per Acre}$$

## **WHEAT, WINTER**

Crop injury may result where severe Winter stress, disease or insect damage follows application. Winter-sensitive varieties may be less tolerant of this product than Winter-hardy varieties. Crop injury may also result from failure to observe the following: Do not use on Sand or Loamy sand soils, nor on Gravelly or Sand loams low in organic matter (less than 1%), nor on thinly covered or exposed subsoil areas (clay knolls); do not treat Wheat planted less than 1 inch deep; do not treat Wheat where Winter climatic conditions have caused "heaving" of plants; do not treat Wheat plants lacking in vigor due to poor emergence, insect damage, disease, high alkalinity or other causes; do not apply after Wheat has reached the "boot" stage of maturity. Unless otherwise specified, do not use with surfactants or nitrogen solutions. Do not replant treated areas to any other crop within 1 year after last treatment (except as noted), as injury to subsequent crops may result.

**ID, OR and WA (East of Cascade Range):** In areas where average annual rainfall exceeds 16 inches, make a single application of 1 to 1.5 pounds per acre. **Fall Treatment:** For early Fall-planted Wheat (seeded before September 10), apply 3 to 6 weeks after planting, but before weeds are 3 to 4 inches tall. Treatment after October 1 has generally given best results. Application should not be made after soil freezes in the Fall. Wheat planted in late October should not be treated until the following Spring. **Spring Treatment:** Apply as soon as Wheat starts to grow in the Spring. Treatment made prior to April 10 will usually give good results provided weed growth is less than 4 inches tall. Application later than May 1 may give poor results.



Alternatively, make a single application of 0.5 to 1 pound of this product plus 0.25 pound bromoxynil per acre as a tank mixture, either in the Fall after Wheat has emerged, but before soil freezes or in the Spring as soon as soil thaws; apply before weeds are 2 inches tall or across. In areas where average annual rainfall is 10 to 16 inches, following Fall planting, make a single application of 1 to 1.5 pounds per acre when sufficient moisture is available to germinate Wheat seed. Apply before soil freezes and before weeds are 2 inches tall. Application later than March 1 may give poor results.

**Note:** If Fall-planted Wheat fails to grow due to Winter kill or adverse growing conditions after Fall treatment, only fields treated before November 1 may be replanted to Spring wheat. Spring wheat should not be planted before April 1 and only after deep discing and plowing to a depth of 4 to 6 inches prior to planting. Do not re-treat field with a second application during the same crop year, as injury to the crop may result.

**OR and WA—West of Cascade Range:** Make a single application of 1.5 to 2 pounds per acre as soon as possible after planting; if Wheat and weeds have emerged, apply before weeds are 3 to 4 inches tall. Alternatively, apply a tank mixture of this product plus bromoxynil as detailed above for "EAST OF CASCADE RANGE".

**Other Areas of OR and WA:** Make a single application in the Spring as soon as Wheat (Fall-planted) starts to grow and before weeds are 2 inches tall. Application later than May 1 may give poor results.

**Central Plains and Midwest:** Use 1 to 2 pounds per acre.

**KS, OK and TX:** Do not use on Sand or Sandy loam soils. Use 1 pound per acre on Silt and Silt loam soils and 1.5 to 2 pounds per acre on Clay, Clay loam and Silty clay loam soils.

**Northeast:** Use 1 to 1.5 pounds per acre.

## FRUIT AND NUT CROPS (See Soil Limitations)

Unless otherwise directed, make a single application per year as a directed spray, avoiding contact of foliage and fruit with spray or drift. Do not graze livestock in treated orchards or groves.

### APPLES

Use this product alone or apply as a tank mix with Sinbar®.

**This Product Applied Alone:** Use only under trees established in the orchard for at least 1 year; do not treat varieties grafted on full-dwarf root stocks. Apply 4 pounds per acre in the Spring (March through May). In the Far West, apply 4 pounds per acre to small weeds less than 2 inches in height or diameter under dormant trees. Alternatively, treatments to small weeds may be applied at 2 pounds per acre post-harvest followed by 2 pounds per acre prior to budbreak.

**GA:** Apply 2 to 3 pounds per acre in the Spring. Repeat application in the Fall but do not use more than 4 pounds per acre per year. Add a surfactant to improve control of small, emerged weeds.

**This Product plus Sinbar:** Use only under trees established in the orchard for at least 2 years. Apply either in the Spring or after harvest in the Fall before weeds emerge or during early seedling stage of weed growth.

Soil Texture	Lbs. of Product Per Acre	
	1 to 2% Organic Matter This Product plus Sinbar	More Than 2% Organic Matter This Product plus Sinbar
Sandy loam	1 + 1	1.5 + 1.5
Loam, Silt loam, Silt	1.5 + 1.5	2 + 2
Clay loam, Clay	2 + 2	2 + 2

Where crop is grown under furrow-irrigation or under raised-berm flood irrigation (trees 4 to 6 inches above waterline), apply only as a band treatment. Do not treat trees planted in the bottom of irrigation furrows, nor trees grown under flat flood or basin irrigation, as injury to trees may result. Where complete weed control to harvest is desired, additional weed control measures may be required during the growing season.

## BANANAS AND PLANTAINS

**New Plantings:** To control Annual weeds, apply 1.5 to 3 pounds per acre after planting, but before weeds or crop emerge. Do not apply to loose soil directly over the planting material.

**Established Plantings:** For control of Annuals and for top-kill of Perennials such as Bermudagrass, Birdseed grass and Guineagrass, apply 3 to 6 pounds per acre. Add a surfactant. Avoid contact of plants with spray or drift, as injury may result. When tall, dense weed growth is present, remove weed growth before application. If application is made to soil free of weeds, omit the surfactant from the spray mixture. Repeat treatment as needed. Apply at 6-week intervals or longer, but no more than a total of 12 pounds per acre (broadcast basis) in a 12-month period. Do not replant treated areas to any crop within 2 years after last application as injury to subsequent crops may result. Exception: Sugarcane or Pineapple may be planted after 1 year.

## BLUEBERRIES, CANEBERRIES AND GOOSEBERRIES

Use only in fields which have been established for at least 1 year. Do not apply to Berries interplanted with fruit trees. Do not apply to plants whose roots are exposed, as injury may result. Apply as a band treatment at the base of canes or bushes. For Spring application, apply before germination and growth of Annual weeds.

**AR, FL, GA, MO, MS, NC, NH and SC—Blueberries:** Apply 1.5 to 2 pounds per acre in the Spring and repeat treatment after harvest in the Fall. For each 25 gallons of spray, add a surfactant to the spray mixture to improve control of small, emerged weeds.

**IN, MI and OH—Blueberries:** Apply 2 to 4 pounds per acre in late Spring. Alternatively, apply 2 pounds per acre in the Fall and repeat at same rate in the Spring.

**IN, MI, OH—Raspberries:** Apply 3 pounds per acre in the Spring.

**MA, ME—Blueberries:** Apply 2 pounds per acre in late Spring.

**MD, NJ—Blueberries:** For control of Winter annuals, apply 2 pounds per acre in October, November or December or a single application of 2.5 pounds per acre may be applied in early to mid-Spring.

**CA—Raspberries, Blackberries, Boysenberries, Dewberries and Loganberries:** For control of Winter annuals, apply 2 pounds per acre in October or November. Repeat at same rate in late Spring to control Annuals. A single application of 3 pounds per acre in January or February will control both Winter and Summer annuals in some areas, but the separate Fall and Spring schedule is preferred.

**Western OR and Western WA—Blueberries, Caneberries and Gooseberries:** For control of Winter annual weeds, apply 2 pounds per acre in October or November. Repeat at the same rate in late Spring to control Annuals. A single application of 3 pounds per acre in January or February will control both Winter and Summer annuals in some areas, but the separate Fall and Spring schedule is preferred.

## CITRUS

**AZ (except Yuma area) and CA (except Imperial and Coachella Valleys):** Apply 3 to 4 pounds per acre shortly after grove has been laid-up in final form (no-tillage program) in late Fall or early Winter. Alternatively, apply 2 pounds per acre in October or November and repeat at the same rate in March or April. Subsequent annual applications of 2 to 3 pounds per acre will usually give adequate weed control.

**FL:** Use only as a band application. Do not use "Trunk to Trunk".

**East Coast/Flatwoods Areas (Low permeable soils):** Do not use more than 8 pounds per treated acre in any one application. Do not apply more than 12 pounds per treated acre per year. This amount corresponds to 9.6 pounds of diuron, the active ingredient in this product. The maximum allowable use rate for diuron is 9.6 pounds per treated acre per year inclusive of all diuron formulations used within 1 year.

**Ridge Areas, except Highland Co. (Highly permeable soils):** Do not use more than 4 pounds per treated acre in any one application. Do not apply more than 8 pounds per treated acre per year. This amount corresponds to 6.4 pounds of diuron, the active ingredient in this product. The maximum allowable use rate for diuron is 6.4 pounds per treated acre per year inclusive of all diuron formulations used within 1 year.

**Ridge Areas, Highland Co. (Highly permeable soils):** Do not use more than 4 pounds per treated acre in any one application. Do not apply more than 6 pounds per treated acre per year. This amount corresponds to 4.8 pounds of diuron, the active ingredient in this product. The maximum allowable use rate for diuron is 4.8 pounds per treated acre per year inclusive of all diuron formulations used within 1 year. Do not use at less than 60-day intervals.

**Puerto Rico:** Make a single application of 4 to 8 pounds per acre or apply 3 to 4 pounds per acre followed by the same rate 4 to 6 months later. On bearing Citrus, apply any time when seasonal rains are expected. On non-bearing trees, apply when Winter banks are pulled down. For control of Guineagrass, Loosestrife, Maidencane, Paragrass, Primrose willow and Seamyrtle in ditches adjacent to Citrus groves, use 1 pound per 1,000 square feet (40 pounds per acre) in sufficient water (minimum 4 gallons per 1,000 square feet) to provide thorough and uniform coverage. Apply in the Spring before weed growth starts or after removal of vegetation. Repeat treatment on a spot basis to control hard-to-kill species such as Guineagrass. In bedded groves, do not treat water furrows between the beds, as injury to the trees may result.

**TX:** Apply 2 to 4 pounds per acre for Annual weeds. Use 4 to 6 pounds per acre for control of Johnsongrass seedlings. Best results accompany application in the Spring. Well established weeds should be eliminated by cultivation prior to treatment.

## FILBERTS (Except CA)

This product is recommended for control of certain weeds in Filbert orchards established for at least one year. Apply this product as a directed spray, avoiding contact on the foliage and fruit with spray or drift. Make an initial treatment of 4 to 5 pounds per acre in the late Fall or early Winter after harvest. Repeat annually with 3 to 4 pounds per acre, or apply 2 pounds per acre in October or November after harvest and repeat at the same rate in March or April. Do

not apply when nuts are on the ground. Do not graze livestock in treated orchards. Do not use on Light sandy soils. If trees are planted on hillsides, the elimination of weeds and ground cover may cause excessive soil erosion. Under these conditions, strip applications of this product (at proportionately lower rates) may be made near the trees or to the tree rows perpendicular to the slope.

#### GRAPES

Apply only to established vineyards (at least 3 years old) as a band treatment. On soils low in clay or organic matter (1 to 2%), severe plant injury may result if heavy rainfall or more than one inch of irrigation occurs soon after treatment. This risk must be assumed by the user.

**East of the Rocky Mountains:** On soils low in clay or organic matter (1 to 2%), apply 2 to 3 pounds per acre. On soils high in clay or organic matter, apply 3 to 6 pounds per acre. Apply in the Spring just prior to germination of Annual weeds.

**West of the Rocky Mountains:** For best results, apply during the Winter months when weeds are less than 2 inches in height or diameter. Rainfall or overhead sprinkler irrigation sufficient to wet the soil to a depth of 2 inches is necessary to activate the herbicide. Abnormally heavy rainfall following application, just before Spring growth, may move the herbicide into the root zone of Grapes which could result in injury. For initial treatment, apply 3 to 4 pounds per acre; subsequent annual applications of 2 pounds per acre will usually give adequate weed control. Do not apply to vines with trunks less than 1.5 inches in diameter, as injury may result.

**NY and PA—Grasses:** Use only in established vineyards (at least 4 years old) for spot control of Perennial grasses such as Orchardgrass, Quackgrass and Ryegrass. Apply in the Spring as a band treatment to ridged soil (2 to 4 inches high) under the trellis at the rate of 8 to 12 pounds per acre. Band width should not exceed 30 inches. Do not apply more than once every 4 years. Use only on heavy soils, such as Loams, Silt loams or Clay loams. Do not use in areas where Grape roots are shallow or exposed because of high bedrock, poor drainage or erosion, as injury to Grapevines may result.

#### MACADAMIA NUTS

**HI:** Use only under trees established in the orchard for at least 1 year. Apply 2 to 6 pounds per acre immediately after harvest, preferably before weeds emerge. If weeds have emerged, add surfactant. Re-treat as needed, but do not exceed 10 pounds per acre per year.

#### OLIVES

**CA:** Use only under trees established in the grove for at least 1 year. Apply 2 pounds per acre after grove has been laid-up in final form in late October or November; repeat at the same rate in March or April. Remove weed growth prior to treatment.

#### PAPAYAS

Use only under trees established in the orchard for at least 1 year. Apply 2.5 to 5 pounds per acre, preferably before weeds emerge. If weeds have emerged, add a surfactant.

#### PEACHES

Use this product alone or apply as a tank mixture with Sinbar.

Where crop is grown under furrow-irrigation or under raised-berm flood irrigation (trees 4 to 6 inches above waterline), apply only as a band treatment. Do not treat trees planted in the bottom of irrigation furrows, nor trees grown under flat flood or basin irrigation, as injury to trees may result. Where complete weed control to harvest is desired, additional weed control measures may be required during the growing season.

**This Product Alone:** Use only under trees established in the orchard for at least 3 years. Apply 2 to 5 pounds per acre in the early Spring before weeds emerge or during the early seedling stage of weed growth. Do not apply within 3 months of harvest. In the Far West, do not apply within 8 months of harvest.

**GA:** On trees established for at least 2 years, apply 2 to 3 pounds per acre in the Spring. Repeat application in the Fall, but do not exceed 5 pounds per acre per year. Add surfactant to improve control of small, emerged weeds.

**This Product plus Sinbar:** Use only under trees established in the orchard for at least 2 years. Apply either in the Spring or after harvest in the Fall before weeds emerge or during early seedling stage of weed growth.

Soil Texture	Lbs. of Product Per Acre	
	1 to 2% Organic Matter This Product plus Sinbar	More Than 2% Organic Matter This Product plus Sinbar
Sandy loam	1 + 1	1.5 + 1.5
Loam, Silt loam, Silt	1.5 + 1.5	2 + 2
Clay loam, Clay	2 + 2	2 + 2

#### PEARS

Use only under trees established in the orchard for at least 1 year. Do not treat varieties grafted on full-dwarf root stocks. Apply 4 pounds per acre in the Spring (March through May). In the Far West, apply 4 pounds per acre to weeds less than 2 inches in height or diameter under dormant trees. Alternatively, apply to small weeds at 2 pounds per acre post-harvest followed by 2 pounds per acre prior to budbreak.

#### PECANS

Use this product alone or apply as a tank mixture with Sinbar. Make a single band or broadcast application as a directed spray using a minimum of 30 gallons of water per acre. Apply in the Spring before weeds emerge or during the early seedling stage of growth.

Soil Texture	Lbs. of Product per Acre		
	This Product Alone*	-OR-	Tank Mixture This Product plus Sinbar**
Sandy loam	2		1.5 + 1.5
Loam, Silt loam, Silt	3		1.75 + 1.75
Clay loam, Clay	4		2 + 2

\*Use only on trees established in the grove for at least 3 years and on soil with at least 0.5% organic matter.

\*\*Use on trees established in the grove for at least 1 year and on soil with at least 1% organic matter.

**Note:** Do not use on eroded areas where subsoil or roots are exposed, nor on trees that are diseased or lacking in vigor or on trees planted in irrigation furrows, as injury to the trees may result.

#### PINEAPPLE

**HAWAII:** Apply 2 to 6 pounds per acre as a broadcast spray just before or immediately after planting but prior to weed emergence. Use 2 to 4 pounds per acre after harvesting the plant crop or ratoon crop (for first ratoon crop as well as subsequent ratoon crops) but before differentiation. For plant crop only, additional broadcast or interspace applications may be made prior to differentiation at the rate of 2 pounds per acre at intervals of not less than 2 months. Additional applications to plant crop may be made as needed to interspace only using 2 pounds per acre. Do not apply more than 12 pounds per acre as broadcast sprays nor more than 16 pounds total per acre per plant crop. Treated areas may be planted to pineapple or sugarcane 1 year after last application.

**FL:** Apply 4 to 8 pounds per acre as a broadcast spray just before or immediately after planting, but prior to weed emergence. Use 4 pounds per acre after harvesting plant crop (for ratoon crop). For plant crop only, a second and third broadcast or interspace application may be made prior to differentiation at the rate of 2 pounds per acre at intervals of not less than 2 months. Additional applications to plant crop may be made as needed to interspace, only using 2 pounds per acre. Do not apply more than 3 broadcast sprays (maximum 12 pounds per acre) prior to differentiation, nor more than 16 pounds total per acre per plant crop. Treated areas may be planted to Pineapple or Sugarcane 1 year after last application.

**Puerto Rico:** Apply 3.75 to 6.25 pounds per acre as a broadcast spray just before or immediately after planting, but prior to weed emergence. Application controls weeds such as Crabgrass, Crotalaria, Fall panicum, Foxtail, Goosegrass, Morningglory, Pigweed, Purslane and Sourgrass. Treated areas may be planted to Pineapple or Sugarcane 1 year after last application.

#### WALNUTS (English)

**CA, OR, WA:** Use only under trees established in the orchard for at least 1 year. As an initial treatment, apply 3 to 5 pounds per acre after the orchard has been laid-up in final form (no-tillage program) in late Fall or early Winter; re-treat annually with 2 to 3 pounds per acre. Alternatively, apply 2 pounds per acre in October or November and repeat at same rate in March or April. Do not use on Sand, Loamy sand, Gravelly soils or exposed sub-soils, nor where organic matter is less than 1%. Do not graze livestock in treated orchards and groves.

#### ORNAMENTAL CROPS (See Soil Limitations)

##### ORNAMENTAL BULB CROPS (Bulbous Iris, Narcissus)

**Western WA:** Make a single application of 4 pounds per acre. Apply after planting, but no later than 4 weeks prior to bulb emergence (usually late September or October). Do not replant treated areas to any crop within 1 year after last application, as injury to subsequent crops may result.

##### PLUMOSUS FERN

**FL:** Hand weed and mow fern; then make a single application of 3 pounds per acre within 3 to 5 days. Do not cultivate or disturb soil after application, as crop injury may result. Treat only established stands at least 1 year old.



## TREE PLANTINGS

**CO, MT, ND, NE, SD, WY:** Use only under established plantings (1 year or older) of American elm, Caragana, Cottonwood, Douglas fir, Green ash, Honeysuckle, Ponderosa pine, Red cedar, Russian olive and Siberian elm. Use 2.5 to 5 pounds per acre; apply as a band 4 feet wide in the tree row (2 feet on each side of row). For example, 1 ounce of this product (4 level tablespoons) treats 135 feet of tree row (2 feet on each side of row) at the rate of 5 pounds per acre. Apply as a directed spray in early Spring before weeds emerge and before trees leaf out. Do not apply to foliage of trees, nor under trees growing in low areas, as injury to the trees may result.

**Hybrid Poplar (ID, OR, WA Only):** For control of weeds to aid in the establishment of Hybrid poplar plantings, apply 1 to 3 pounds per acre depending upon silt texture and organic matter content. Use 1 to 2 pounds per acre on Coarse textured soils and 2 to 3 pounds per acre on Medium to Fine textured soils. Do not use on Gravelly soils or on any soil having less than 0.5% organic matter, as injury to trees may result. Injury may result from applications to Poplar plantings grown on Sandy soil with low organic matter with sprinkler irrigation. When applied in a band, the application rate will be in proportion to the area banded on a per acre basis.

Apply in late Winter or early Spring as a uniform broadcast spray before or after planting, but prior to bud swell, or as a directed spray after bud swell. Apply before weeds emerge or after emergence while weeds are small. Some rainfall or water is necessary to move this product into the weed root zone before weeds become well established. If weeds are present at time of treatment, add a surfactant at 1 to 2 quarts per 100 gallons of spray solution.

**Pre-plant:** If application is made prior to planting, take precautions to prevent treated soil (usually top 1 inch) from coming into contact with roots of trees during the planting process, as injury may result.

**Post-plant (Broadcast):** If application is made after planting, it is best to wait until rain or irrigation has settled the soil around the newly planted trees before applying this product. If trees are dormant, a broadcast application can be made.

**Post-plant (Directed):** If buds have started to swell, use a directed spray pattern that prevents this product from having contact with trees, as injury may result. During the growing season (from bud swell to leaf drop), this product may be applied (alone or with tank mix) between tree rows with a shielded and directed spray.

This product can be tank-mixed with a glyphosate herbicide (Roundup Pro Herbicide, Roundup Original Herbicide or Glyphosate Original Herbicide) pre-plant and as a directed spray to broaden the spectrum of weeds controlled and improve post-emergence activity. Use 1 to 3 pounds of this product plus glyphosate herbicide (according to label recommendations) depending upon soil type and weeds to be controlled. Note: There are several formulations of glyphosate herbicide. Check the glyphosate herbicide label to verify that the intended use as a pre-plant or post-directed spray on hybrid Poplar plantations is allowed. Avoid contact of glyphosate herbicide with foliage, green stems, trees or other desirable vegetation because severe damage or destruction may result.

## NON-CROP WEED CONTROL

This product is an effective herbicide for the control of many weeds. The degree of control and duration of effect will vary with the amount of chemical applied, soil texture, rainfall and other conditions. This product may be used as a pre-emergence treatment at any time of year, except when ground is frozen, provided adequate moisture is supplied by rainfall or artificial means to activate the herbicide. Best results are obtained if applications made to the soil are applied shortly before weed growth begins. If dense growth is present, remove tops and spray the ground. Increased contact activity on established weeds may be obtained using a surfactant. Apply as a drenching spray to actively growing weeds during warm weather when daily temperature will exceed 70°F.

Use a fixed-boom power sprayer properly calibrated to ensure a constant rate of application. Mix proper amount of this product into volume of water necessary to obtain uniform coverage. If surfactant is used, dilute with ten parts of water and add as last ingredient to a nearly full tank. This product must be kept in suspension at all times. Agitate by mechanical or hydraulic means in the spray tank. If bypass or return line is used, it should terminate at the bottom of the tank to minimize foaming. Use 50-mesh screen or larger.

**General Weed Control:** To control most Annual weeds for an extended period of time on non-cropland such as utility, highway, pipeline and railroad right-of-ways, petroleum tank farms, lumberyards, storage areas, industrial plant sites, around farm buildings and similar areas, apply 5 to 15 pounds per acre to control most Annual weeds including:

### Broadleaves - 5 to 15 Lbs. per Acre

Ageratum	Knawel	Ragweed
Chickweed	Lambsquarters	Sesbania
Cocklebur	Marigold	Shepherdspurse
Corn speedwell	Mexican clover	Sicklepod
Corn spurry	Morningglory, Annual	Smartweed, Annual
Dayflower	Pennycress	Sowthistle, Annual
Dogfennel	Pigweed	Spanishneedles
Fiddleneck (Amsinckia)	Pineappleweed	Tansymustard
Flora's paintbrush	Pokeweed	Velvetleaf (Buttonweed)
Gromwell	Prickly lettuce	Wild buckwheat
Groundcherry, Annual	Prickly sida (Teaweed)	Wild lettuce
Hawksbeard	Purslane	Wild mustard
Horsenettle	Rabbit tobacco	Wild radish

### Grasses - 5 to 8 Lbs. per Acre

Barnyardgrass (Watergrass)	Orchardgrass	Sandbur
Bluegrass, Annual	Peppergrass	Seedling Johnsongrass
Crabgrass	Quackgrass	Velvetgrass
Foxtail	Rattail fescue	Vernalgrass, Sweet, Annual
Kylinga	Red sprangletop	
Lovegrass, Annual	Ricegrass	
	Ryegrass, Annual	

### Grasses - 8 to 15 Lbs. per Acre

Guineagrass	Maidengrass	Pangolagrass
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**Irrigation and Drainage Ditches:** Apply 5 to 15 pounds per acre to control most Annual weeds shown above. Apply only when water is not in the ditch. For irrigation ditches, apply during the non-crop season and when ditch is not in use. Minimize movement of this product with irrigation water to avoid crop injury. It is essential that the herbicide be fixed in the soil by moisture. Apply before expected seasonal rainfall, if possible, when soil in the ditch is still moist. Following treatment, if rainfall has not totaled at least 4 inches, fill ditch with water and allow to stand for 72 hours; drain off any waste water remaining before using ditch. Do not treat any ditch area into which roots of trees or other desirable plants may extend, as injury may result.

**Dry Application:** This product may be applied dry for control of the listed weeds on non-crop sites. Apply this product using dry application (ground) equipment to distribute the granules uniformly to the target area.

## STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** Storage should be under lock and key and secure from access by unauthorized persons and children. Storage should be in a cool, dry area away from any heat or ignition source. Avoid storage at high temperatures. Do not stack over 2 pallets high. Move bags carefully so as not to tear or puncture. Do not move containers from one area to another unless they are securely sealed. Keep containers tightly sealed when not in use. Do not allow bags to become wet or store in a damp, humid area. Keep away from any puncture source. Avoid storage near water supplies, food, feed and fertilizer to avoid contamination. Store in original containers only. If the contents are leaking or material is spilled, follow these steps:

1. Collect and place in suitable containers for disposal.
2. Wash area with soap and water to remove remaining pesticide.
3. Follow washing with clean water rinse.
4. Do not allow runoff to enter sewer or contaminate water supplies.
5. Dispose of waste as indicated below.

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

**CONTAINER DISPOSAL:** Completely 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.

## WARRANTY—CONDITIONS OF SALE

OUR RECOMMENDATIONS FOR USE of this product are based upon tests believed reliable. Follow directions carefully. Timing and method of application, weather and crop conditions, mixtures with other chemicals not specifically recommended, and other influencing factors in the use of this product are beyond the control of the Seller. Buyer assumes all risks of use, storage and handling of this material not in strict accordance with directions given herewith.

In no case shall the Manufacturer or the Seller be liable for consequential, special or indirect damages resulting from the use or handling of this product when such use and/or handling is not in strict accordance with directions given herewith. The foregoing is a condition of sale by Manufacturer and is accepted as such by the Buyer.