



H - 64953

# DuPont™ Velpar® DF

herbicide

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*“..... A Growing Partnership With Nature”*

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# DuPont™ Velpar® DF

## herbicide

### Dispersible Granules

Active Ingredient	By Weight
Hexazinone [3-cyclohexyl-6-(dimethylamino) -1-methyl-1,3,5-triazine-2,4(1H,3H)-dione]	75%
<b>Inert Ingredients</b>	25%
<b>TOTAL</b>	100%

EPA Reg. No. 352-581

### KEEP OUT OF REACH OF CHILDREN

## DANGER PELIGRO

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

### 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 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

**IF ON SKIN OR CLOTHING:** 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.

**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 person.

**NOTE TO PHYSICIAN:** Probable mucosal damage may contraindicate the use of gastric lavage.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-441-3637 for medical emergencies involving this product.

### PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

#### DANGER! CAUSES EYE DAMAGE.

Corrosive, causes irreversible eye damage. Harmful if swallowed. Do not get in eyes or on clothing. Avoid contact with skin. Wash thoroughly with soap and water after handling.

#### PERSONAL PROTECTIVE EQUIPMENT

**Applicators and other handlers must wear:**

Long-sleeved shirt and long pants.

Shoes plus socks.

Protective eyewear.

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.

#### USER SAFETY RECOMMENDATIONS

**USERS SHOULD:** Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

#### 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.

The active ingredient, hexazinone, in this product is known to leach through soil into ground water under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground-water contamination.

## GENERAL INFORMATION

DuPont™ VELPAR® DF herbicide is a water-dispersible granule that is mixed in water and applied as a spray for weed control in certain crops, Christmas trees, forestry site preparation and release areas, and industrial areas. It may also be applied as a basal soil treatment for brush control in reforestation areas, rangeland, pastures and noncrop areas.

VELPAR® DF is an effective general herbicide providing both contact and residual control of many annual and biennial weeds and woody plants. It is also effective for control of most perennial weeds.

VELPAR® DF is noncorrosive to equipment.

Caution should be exercised when applying VELPAR® DF near desirable trees or shrubs as they can absorb VELPAR® DF through roots extending in to treated areas.

This product may be applied on conifer plantations and non-crop sites that contain areas of temporary surface water caused by collection of water between planting beds, in equipment ruts, or in other depressions created by management activities. It is permissible to treat intermittent drainage, intermittently flooded low lying sites, seasonally dry flood plains and transitional areas between upland and lowland sites when no water is present. It is also permissible to treat marshes, swamps and bogs after water has receded, as well as seasonally dry flood deltas. DO NOT make applications to natural or man-made bodies of water such as lakes, reservoirs, ponds, streams and canals.

## ENVIRONMENTAL CONDITIONS AND BIOLOGICAL ACTIVITY

VELPAR® DF is absorbed through the roots and foliage. Moisture is required to activate VELPAR® DF in the soil. Best results are obtained when the soil is moist at the time of application and 1/4–1/2 inches of rainfall occurs within 2 weeks after application.

For best results, apply VELPAR® DF preemergence or postemergence when weeds are less than 2 inches in height or diameter. Herbicidal activity is most effective under conditions of high temperature (above 80 °F), high humidity, and good soil moisture. Herbicidal activity may be reduced when vegetation is dormant, semi-dormant, or under stress (e.g. temperature or moisture).

Herbicidal activity will usually appear within 2 weeks after application to susceptible plants under warm, humid conditions; while 4–6 weeks may be required when weather is cool or dry, or when susceptible plants are under stress. If rainfall after application is inadequate to activate VELPAR® DF in the soil, plants may recover from contact effects and continue to grow.

On woody plants, symptoms usually appear within 3–6 weeks after sufficient rainfall has carried the herbicide into the root zone during periods of active growth. Defoliation and subsequent refoliation may occur, but susceptible plants are killed.

The degree and duration of control will depend on the following:

- Use rate

- Weed spectrum and size at time of application
- Environmental conditions at and following treatment

Where a rate range is shown, use the higher levels of the dosage range on hard-to-control species, fine-textured soils, or soils containing greater than 5% organic matter or carbon. Use the lower levels of the dosage range on coarse-textured soils and/or on soils low in organic matter. Refer to specific uses for rate ranges.

## APPLICATION INFORMATION

VELPAR® DF may be applied by ground equipment and, where permitted, aerial equipment. Use rates, minimum spray gallonage, and other application information are described for various uses.

Dispose of the equipment washwater by applying it to a use-site listed on this label or in accordance with directions given in the “Storage and Disposal” section of this label.

Before spraying, calibrate equipment to determine the quantity of water necessary to uniformly and thoroughly cover the vegetation and soil in a measured area to be treated. Make sure the volume of water is sufficient to completely suspend the VELPAR® DF.

## TANK MIXTURES

VELPAR® DF herbicide may be tank mixed with other herbicides and /or adjuvants registered for the uses (crops) specified in the label.

Refer to the label of the tank mix partner(s) for any additional use instructions or restrictions.

## RESISTANCE

When herbicides that affect the same biological site of action are used repeatedly over several years to control the same weed species in the same field, naturally-occurring resistant biotypes may survive a correctly applied herbicide treatment, propagate, and become dominant in that field. Adequate control of these resistant weed biotypes cannot be expected. If weed control is unsatisfactory, it may be necessary to retreat the problem area using a product affecting a different site of action.

To better manage herbicide resistance through delaying the proliferation and possible dominance of herbicide resistant weed biotypes, it may be necessary to change cultural practices within and between crop seasons such as using a combination of tillage, retreatment, tank-mix partners and/or sequential herbicide applications that have a different site of action. Weed escapes that are allowed to go to seed will promote the spread of resistant biotypes.

It is advisable to keep accurate records of pesticides applied to individual fields to help obtain information on the spread and dispersal of resistant biotypes. Consult your agricultural dealer, consultant, applicator, and/or appropriate state agricultural extension service representative for specific alternative cultural practices or herbicide recommendations available in your area.

## INTEGRATED PEST MANAGEMENT

This product may be used as part of an Integrated Pest Management (IPM) program that can include biological, cultural, and genetic practices aimed at preventing economic pest damage. IPM principles and practices include field scouting or other detection methods, correct target pest identification, population monitoring, and treating when target pest populations reach locally determined action thresholds. Consult your state cooperative extension service, professional consultants or other qualified authorities to determine appropriate action treatment threshold levels for treating specific pest/crop systems in your area.

## DIRECTIONS FOR USE

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

DuPont™ VELPAR® DF should be used only in accordance with recommendations on this label, or in supplemental DuPont 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.

The correct use rates by crop and geographical area, specified on the label, and proper mixing/loading site considerations and application procedures must be followed to minimize potential for hexazinone movement into ground water. Users are encouraged to consult with their state Department of Agriculture, Extension Service, or other pesticide lead agency for information regarding soil permeability, aquifer vulnerability, and best management practices for their area.

## AGRICULTURAL USES

### 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 apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

Do not enter or allow worker entry into treated areas during the restricted entry interval(REI) of 24 hours.

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 made of any waterproof material
- Shoes plus socks
- Protective eyewear

## ALFALFA

VELPAR® DF is recommended for control of certain weeds in established alfalfa grown for hay. Do not use on alfalfa grown for seed in any state except California.

### APPLICATION INFORMATION

#### NON-DORMANT AND SEMI-DORMANT VARIETIES

In the following states, make a single application during winter months when alfalfa plants are in the least active stage of growth:

Arizona	Montana	Oklahoma	Washington
California	Nebraska	Oregon	Wyoming
Colorado	Nevada	South Dakota	
Idaho	New Mexico	Texas	
Kansas	North Dakota	Utah	

In the following states, make a single application in the spring before new growth exceeds 2 inches in height or to stubble after cutting following hay removal and before regrowth exceeds 2 inches in height:

Connecticut	Maine	New Hampshire	Vermont
Delaware	Maryland	New Jersey	Virginia
Illinois	Massachusetts	New York	West Virginia
Indiana	Michigan	Ohio	Wisconsin
Iowa	Minnesota	Pennsylvania	
Kentucky	Missouri	Rhode Island	

**NOTE:** Severe alfalfa injury may result following application after cutting if either the regrowth is more than 2 inches high, significant stubble is left after alfalfa cutting, or the air temperature is above 90 °F.

**DORMANT VARIETIES**

Make a single application after alfalfa becomes dormant and before new growth begins in the spring. Where weeds have emerged, use a surfactant.

**USE RATES**

Use higher rates on hard-to-control species, (see **Weeds Controlled** section below) fine textured soils, soils containing greater than 5% organic matter, or under adverse environmental conditions such as temperature extremes or when weeds are stressed due to low rainfall.

For dormant alfalfa, use a surfactant approved for crops at the rate of 0.25% v/v (1 quart per 100 gallons of spray solution).

Select the appropriate rate for soil texture and organic matter content as follows:

Soils	DuPont™ VELPAR® DF (Lb/Acre)*		
	Percent Organic Matter in Soil		
	<1%	1-5%	>5%
<b>Coarse Texture</b>			
Loamy sand, sandy loam	2/3 - 1	2/3 - 1	1 1/3 - 2
<b>Medium Texture</b>			
Loam, silt loam, silt, clay loam, sandy clay loam	2/3 - 1	1 - 2	1 1/3 - 2
<b>Fine Texture</b>			
Silty clay loam, sandy clay, silty clay, clay	1 - 2	1 - 2	1 1/3 - 2

**NOTE:**

- In the states of MT, ND, SD, and WY, do not exceed a use rate of 1 1/3 pounds per acre on medium and fine textured soils.
- In the state of Montana (MT), do not apply to soils with less than 1.5% organic matter.
- In the state of Wyoming (WY): Do not apply to soils with less than 0.5% organic matter. Apply to irrigated alfalfa only.

**WEEDS CONTROLLED**

VELPAR® DF, when applied preemergence or early postemergence at the following rates, is recommended for the control or suppression of the following species in alfalfa crops:

**1/3 - 2/3 Lb/Acre**

Tansymustard	<i>Descurainia pinnata</i>
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**2/3 - 1 1/3 Lb/Acre**

Bluegrass, annual	<i>Poa annua</i>
Brome, downy (cheatgrass)	<i>Bromus tectorum</i>
Buckwheat, wild	<i>Polygonum convolvulus</i>
Catchfly, English	<i>Silene gallica</i>
Chamomile, mayweed (dogfennel)	<i>Anthemis cotula</i>
Chickweed, common	<i>Stellaria media</i>
Fiddleneck, tarweed	<i>Amsinckia lycopoides</i>
Filaree	<i>Erodium sp.</i>
Flixweed	<i>Descurainia Sophia</i>
Groundsel, common	<i>Senecio vulgaris</i>
Henbit*	<i>Lamium amplexicaule</i>
Lettuce, Miner's	<i>Montia perfoliata</i>
Mustard, blue	<i>Chorispora tenella</i>
Mustard, Jim Hill (tumble)	<i>Sisymbrium altissimum</i>
Mustard, wild	<i>Brassica kaber</i>
Orchardgrass (seedling)	<i>Dactylis glomerata</i>
Pigweed, redroot	<i>Amaranthus retroflexus</i>
Radish, wild	<i>Raphanus raphanistrum</i>
Rocket, London	<i>Sisymbrium irio</i>
Rocket, common yellow	<i>Barbarea vulgaris</i>
Salsify	<i>Tragopogon spp.</i>
Shepherdspurse	<i>Capsella bursa-pastoris</i>
Speedwell, purslane	<i>Veronica peregrina</i>
Spurry, corn	<i>Spergula arvensis</i>

**1 1/3 - 2 Lb/Acre**

Alfalfa* (seedling)	<i>Medicago sativa</i>
Barley, foxtail (seedling)	<i>Hordeum jubatum</i>
Bluegrass, perennial* (spring only)	<i>Poa spp</i>
Cockle, white*	<i>Melandrium album</i>
Dandelion, common*	<i>Taraxacum officinale</i>
Dandelion, false* (spotted catsear)	<i>Hypochaeris radicata</i>
Foxtail*	<i>Setaria spp</i>
Kochia	<i>Kochia scoparia</i>
Lambsquarters, common	<i>Chenopodium album</i>
Lettuce, prickly*	<i>Lactuca serriola</i>
Mallow, common	<i>Malva neglecta</i>
Ryegrass, Italian (annual)	<i>Lolium multiflorum</i>
Quackgrass*	<i>Elytrigia repens</i>
Speedwell, ivyleaf	<i>Veronica hederifolia</i>
Tea, Mexican*	<i>Chenopodium ambrosioides</i>
Thistle, Canada (seedling)	<i>Cirsium arvense</i>
Thistle, Russian	<i>Salsola iberica</i>

\* Suppression - a visible reduction in plant population and/or plant vigor as compared to an untreated area and generally not accepted as control.

VELPAR® DF, when applied in late spring or after cutting at the following rates, will control these species listed below:

**2/3 - 2 Lb/Acre**

Crabgrass	<i>Digitaria spp</i>
Fleabane	<i>Conyza spp</i>
Foxtail	<i>Setaria spp.</i>
Jimsonweed	<i>Datura stramonium</i>
Lambsquarters, common	<i>Chenopodium album</i>
Pigweed, redroot	<i>Amaranthus retroflexus</i>

**SPRAY EQUIPMENT**

Apply VELPAR® DF using a fixed boom power sprayer or aerial equipment.

For ground applications apply in a minimum of 20 gallons of spray solution per acre and by air in a minimum of 5 gallons.

## CHEMIGATION ALFALFA

Apply this product only through center pivot sprinkler irrigation systems. Do not apply this product through any other type of irrigation system.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water.

Make a single application during the winter months when alfalfa plants are in the least active stage of growth and/or to stubble after cutting following hay removal and before regrowth exceeds 2" in height.

Severe alfalfa injury may result following application after cutting if either the regrowth is more than 2" high or significant stubble is left after alfalfa cutting.

If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.

A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

### DORMANT APPLICATIONS

Select the appropriate rate (see **Use Rates** section) for soil texture and organic matter content using 0.25" to 0.75" of sprinkler irrigation as a continuous injection during the application. Best results are obtained when soil is moist at time of application, and when weeds have not germinated or are less than 2" tall or across.

### APPLICATION AFTER CUTTING

Apply DuPont™ VELPAR® DF at 5.3 ounces per acre to stubble after cutting, following hay removal, and before regrowth exceeds 2" in height. Apply VELPAR® DF using 0.25" to 0.75" of sprinkler irrigation as a continuous injection during the application. Best results are obtained when soil is moist at time of application and when weeds have not germinated or are less than 2" tall or across.

**NOTE:** Making an application when daily temperatures are forecast to be in the mid-to-high 90 degree range within 3 to 5 days after treatment may increase the potential for crop injury.

### SPRINKLER CHEMIGATION

The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

The irrigation line or water pump must include a functional

pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

### MIXING INSTRUCTIONS

1. Fill the supply tank 1/4 to 1/3 full of water.
2. While agitating, add the required amount of VELPAR® DF and continue agitation until the VELPAR® DF is fully dispersed, at least 5 minutes.
3. Once the VELPAR® DF is fully dispersed, maintain agitation and continue filling tank with water. VELPAR® DF should be thoroughly mixed with water before adding any other material.
4. As the tank is filling, add tank mix partners (if desired). Follow use precautions and directions on the tank mix partner label.
5. After thorough mixing, the agitation system can be stopped to prevent excessive foaming in the tank. Once thoroughly mixed the solution in the supply tank does not require additional agitation unless specified on the companion products label. If foaming occurs in the injection supply tank, a defoaming agent (defoamer) may be added.
6. Apply VELPAR® DF spray mixture within 48 hours of mixing to avoid product degradation.

### USE PRECAUTIONS - CHEMIGATION

- Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label prescribed safety devices for public water systems are in place.
- Distributing treated water in an uneven manner can result in crop injury, lack of effectiveness, or over-tolerance pesticide residues in the crop. Therefore, to ensure that the mixture is applied evenly at the recommended rate, use sufficient water, apply the mixture for the proper length of time and ensure sprinkler produces a uniform water pattern.
- Do not permit run-off during chemigation.

### POSTING OF AREAS TO BE TREATED

Posting of areas to be chemigated is required when 1) any part of a treated area is within 300 feet of sensitive areas such as residential areas, labor camps, businesses, daycare centers, hospitals, in-patient clinics, nursing homes, or any public areas such as schools, parks, playgrounds, or other public facilities not including public roads, or 2) when the chemigated area is open to the public such as golf courses or retail greenhouses.

Posting must conform to all the following requirements:

- Treated areas shall be posted with signs at all usual points of entry and along likely routes of approach from the listed sensitive areas. When there are no usual points of entry, signs must be posted in the corners of the treated areas and in any other location affording maximum visibility to sensitive areas.

- The printed side of the sign should face away from the treated area towards the sensitive area. The signs shall be printed in English. Signs must be posted prior to application and must remain posted until foliage has dried and soil surface water has disappeared. Signs may remain in place indefinitely as long as they are composed of materials to prevent deterioration and maintain legibility for the duration of the posting period.
- All words shall consist of letters at least 2 1/2 inches tall, and all letters and the symbol shall be a color which sharply contrasts with their immediate background. At the top of the sign shall be the words “KEEP OUT”, followed by an octagonal stop sign symbol at least 8 inches in diameter containing the word “STOP”. Below the symbol shall be the words “PESTICIDE IN IRRIGATION WATER”.
- Posting required for chemigation does not replace other posting and reentry requirements for farm worker safety.

### REPLANTING (FOLLOWING ALFALFA)

- Do not replant treated areas to any crop except corn, root crops or sugarcane within two years after treatment, as crop injury may result.
- Corn may be planted 12 months after the last treatment in areas of moderate to high rainfall (greater than 20 inches), provided the use rate did not exceed 1 lb per acre.
- Root crops such as potatoes, sugarbeets, radish and carrots may be planted 12 months after last treatment, provided the use rate does not exceed 2/3 lb per acre. Sites with use rates higher than 2/3 lb per acre should not be replanted to any root crop within 2 years after application of DuPont™ VELPAR® DF, or unacceptable crop injury may result.

In areas where irrigation is needed to produce the crop, the crop rotation intervals listed may need to be extended if the normal irrigation amount is reduced for any reason.

- Sugarcane may be planted any time following treatment.
- In California, do not replant seed alfalfa areas to any crop within two years after treatment, as crop injury may result.

### FLOOD IRRIGATED ALFALFA

In arid climates (10 inches of rainfall or less per year) or areas where drought conditions have prevailed for one or more years, a field bioassay should be completed prior to planting any desired crop. The results of this bioassay may require the rotation intervals listed above to be extended.

A successful bioassay means growing to maturity a test strip of the crop(s) intended for production. The test crop(s) strip should cross the entire field including knolls, low areas, and areas where any berms were located.

### ALFALFA - IMPREGNATION ON DRY BULK FERTILIZER (EXCEPT CALIFORNIA AND ARIZONA)

Dry bulk fertilizer may be impregnated or coated with VELPAR® DF for application to established alfalfa. All recommendations on this label must be followed along with state regulations relating to dry bulk fertilizer blending, impregnating and labeling.

If fertilizer materials are excessively dusty, use a suitable additive to reduce dust prior to impregnation, as dusty fertilizer will result in poor distribution during application. The dry fertilizer must be properly impregnated and uniformly applied to the alfalfa to avoid crop injury and/or poor weed control.

To impregnate the fertilizer, use a system consisting of a conveyor or closed drum used to blend dry bulk fertilizer. Any commonly used fertilizer can be impregnated with VELPAR® DF, except potassium nitrate or sodium nitrate. Do not use VELPAR® DF on limestone.

Use a minimum of 250 lb dry bulk fertilizer per acre and up to a maximum of 450 lb per acre. To impregnate or coat the dry bulk fertilizer with VELPAR® DF, mix 2 2/3 pounds of VELPAR® DF with sufficient water to make one gallon of suspension and thoroughly agitate. Direct the nozzles to deliver a fine spray of this suspension toward the fertilizer for thorough coverage while avoiding spray contact with mixing equipment. Uniform impregnation of VELPAR® DF to dry bulk fertilizer will vary, and if the absorptivity is not adequate, the use of an absorptive powder may be required to produce a dry, free-flowing mixture. “Microcel E” is the recommended absorbent powder. When another herbicide is used with VELPAR® DF, mix and impregnate the fertilizer immediately.

Apply impregnated fertilizer as soon as possible after impregnation for optimum performance.

Select the rate of VELPAR® DF to apply per acre from the appropriate section of this label. Then refer to the rate chart below to determine the amount of VELPAR® DF that should be impregnated on a ton of dry bulk fertilizer, based on the amount of fertilizer to be distributed in one acre.

#### Rate Chart for Impregnating Fertilizer with VELPAR® DF

Fertilizer Rate/Acre	VELPAR® DF Rate Per Acre			
	2/3 Lbs	1 Lbs	1 1/3 Lbs	2 Lbs
250 lbs	5.3 lbs/ton	8.0 lbs/ton	10.6 lbs/ton	16.0 lbs/ton
300 lbs	4.4 lbs/ton	6.6 lbs/ton	8.8 lbs/ton	13.3 lbs/ton
350 lbs	3.7 lbs/ton	5.7 lbs/ton	7.5 lbs/ton	11.4 lbs/ton
400 lbs	3.3 lbs/ton	5.0 lbs/ton	6.7 lbs/ton	10.0 lbs/ton
450 lbs	2.9 lbs/ton	4.4 lbs/ton	5.9 lbs/ton	8.9 lbs/ton

For rates other than those listed, use the following formula to calculate the amounts of VELPAR® DF to be impregnated per ton of dry fertilizer.

$$\text{VELPAR® DF} \times \frac{\text{Lbs}}{\text{Per acre}} \times \frac{2000}{\text{Lbs Fertilizer Per Acre}} = \frac{\text{Lbs}}{\text{Ton of Fertilizer}} \text{ VELPAR® DF Per}$$

#### APPLICATION

Uniform application of VELPAR® DF-impregnated dry fertilizer is essential for satisfactory weed control. Accurate calibration of the application equipment is essential for uniform distribution to the surface. The recommended method of application is to apply 1/2 the recommended rate and overlap 50%. This results in the best distribution pattern.

## USE PRECAUTIONS - ALFALFA

- Best results are obtained when 1/2–1 inches of rainfall or sprinkler irrigation occurs within two weeks after application, when soil is moist at time of application, and when weeds have not germinated or are less than 2 inches in height or diameter. Heavy rainfall or excessive irrigation after application may result in crop injury or poor performance of the herbicide.
- On soils high in organic matter (greater than 5%), the effectiveness of DuPont™ VELPAR® DF can be significantly reduced and weed control may be unsatisfactory.
- Crop injury, including mortality, may result in fields with restricted root growth due to non-uniform soil profiles such as gravel bases and clay lenses.
- Crop injury may result if hot weather, mid-to-high 90 degree range or higher, occurs within a few days after application.
- Do not apply to snow-covered or frozen ground.
- Since the effect of VELPAR® DF on alfalfa varies with soil conditions, uniformity of application, and environmental conditions, growers should limit their first use to small areas.
- If abnormally dry conditions exist following application, restrict the first irrigation to no more than 1/2 acre inch of water.
- Temporary yellowing of alfalfa may occur following VELPAR® DF applications.
- Treat only stands of alfalfa established for one year or for one growing season (except in California), provided:
  - The alfalfa stand has a well developed tap root structure that is at least 10 inches in length (0.25 inch diameter below the crown) throughout the field and the crop is healthy, vigorous, and not under stress from weather conditions, low fertility, insects or disease damage.
  - In areas with shorter growing seasons, such as, higher elevations, adequate alfalfa tap root growth may not occur and especially when alfalfa is grown together with a cover or nurse crop. If an adequate tap root is not present, delay application of VELPAR® DF until the alfalfa has gone through a minimum of two growing seasons.
- In California, fall planted alfalfa may be treated in the following winter months with VELPAR® DF at 1/3 to 2/3 pounds per acre (use higher rate for fine textured soils) provided:
  - alfalfa root growth exceeds 6 inches in length
  - vegetative top growth of alfalfa has lateral development of secondary growth
  - alfalfa is healthy and vigorous, not growing under stress from insect, disease, winter injury or other types of stress.Injury may result to alfalfa plants that fail to meet these growth criterion listed above.
- Do not use VELPAR® DF on seedling alfalfa, alfalfa-grass mixtures, or other mixed stands as injury may result to the seedling alfalfa or companion crop.

- Do not use VELPAR® DF in low desert valleys in California or Arizona.
- Do not add a surfactant to VELPAR® DF when treating nondormant alfalfa.
- Do not use VELPAR® DF on gravelly or rocky soils, exposed subsoils, hardpan, sand, poorly drained soil, or alkali soils.
- Do not graze or feed forage or hay to livestock within 30 days following application.

## SEED ALFALFA (CALIFORNIA ONLY) ADDITIONAL USE PRECAUTIONS

- Do not use VELPAR® DF on fields with sandy loam or loamy sand soils having less than 1% organic matter.
- Do not exceed 2/3 pound per acre on fields with sandy loam or loamy sand soils having 1–2% organic matter.
- Do not exceed 2/3 pound per acre on seed alfalfa that has been established for only one growing season.

## BLUEBERRY

### HIGH BUSH BLUEBERRIES

VELPAR® DF is recommended for control of certain herbaceous and woody weeds in established high bush blueberry fields.

#### APPLICATION INFORMATION

VELPAR® DF may be applied to high bush blueberries that have been established for 3 or more years. Apply VELPAR® DF in the spring before blueberry leaf emergence. Direct the spray solution towards the soil and weeds.

Using calibrated ground spray equipment, make the application in sufficient water to provide thorough and uniform coverage to the treated area (usually 20 gallons per acre). Shut off spray booms when starting, turning, slowing or stopping, or injury to the crop may result.

#### USE PRECAUTIONS

- Do not apply through any type of irrigation system.
- Do not apply within 90 days of harvest.
- Do not apply to flooded field with standing water.
- Application to blueberry foliage will result in crop injury.
- Since the effect of VELPAR® DF on blueberries varies with soil type, plant vigor, uniformity of applications and amount of rainfall, it is suggested that growers limit their first use to small areas.

### LOW BUSH BLUEBERRIES

VELPAR® DF may be used for the control of certain weeds in low bush blueberries.

## APPLICATION INFORMATION

DuPont™ VELPAR® DF may only be applied to pruned blueberry fields in the spring before leaf emergence. Using calibrated ground spray equipment, make the application in sufficient water to provide thorough and uniform coverage to the treated area (usually 20 gallons per acre). Shut off spray booms when starting, turning, slowing or stopping, or injury to the crop may result.

### USE RATES (Lb/Acre)

#### HIGH BUSH BLUEBERRIES

Soil texture	less than or equal to 3% organic matter	greater than 3% organic matter
Coarse loamy sand, sandy loam (50-85% sand)	1.3	1.6
Medium loam, silt loam, silt, clay loam, sandy clay loam		2.6
Fine silty clay loam, clay loam, sandy clay, silty clay, clay	*1.3 - 2	2.6

\*Use the higher rate as the soil organic matter approaches 3%.

#### LOW BUSH BLUEBERRIES

Soil texture	less than or equal to 3% organic matter	greater than 3% organic matter
Coarse loamy sand, sandy loam (50-85% sand)	1.2	1.6
Medium loam, silt loam, silt, clay loam, sandy clay loam		2
Fine silty clay loam, clay loam, sandy clay, silty clay, clay	*1.2 - 2.4	2.4 - 3.6**

\*Use the higher rate as the soil organic matter approaches 3%.

\*\*Use the higher rate for harder to control species.

### USE PRECAUTIONS

- Do not apply through any type of irrigation system.
- Do not apply to flooded field with standing water.
- Do not apply within 450 days of harvest.
- Do not exceed 2.4 pounds per acre if field has been treated with hexazinone within the past 8 years.
- Application to blueberry foliage will result in crop injury.
- Since the effect of VELPAR® DF on blueberries varies with soil type, plant vigor, uniformity of applications and amount of rainfall, it is suggested that growers limit their first use to small areas. If excessive leaf drop is observed after treatment, reduce rate in future applications.
- Maintain a 50 foot buffer from any well head or water reservoir.

## WEEDS CONTROLLED

VELPAR® DF is recommended for the control or suppression of the following species in high and low bush blueberry crops:

Aster, heath*	<i>Aster ericoides</i>
Barnyardgrass	<i>Echinochloa crus-galli</i>
Blackberry* (briar)	<i>Rubus spp</i>
Bluegrass,	
Kentucky (perennial)*	<i>Poa pratensis</i>
Brome, downy (cheatgrass)	<i>Bromus tectorum</i>
Broomsedge*	<i>Andropogon virginicus</i>
Carrot, wild*	<i>Daucus carota</i>
Catchfly, English	<i>Silene gallica</i>
Chamomile, mayweed	<i>Anthemis cotula</i>
Cherry, wild	<i>Prunus serotia</i>
Chickweed, common	<i>Stellaria media</i>
Cinquefoil	<i>Potentilla spp</i>
Cockle, white*	<i>Melandrium album</i>
Dandelion, common*	<i>Taraxacum officinale</i>
Dandelion, false* (spotted catsear)	<i>Hypochaeris radicata</i>
Daisy, oxeye	<i>Chrysanthemum leucanthemum</i>
Dock, curly*	<i>Rumex crispus</i>
Dogfennel	<i>Eupatorium capillifolium</i>
Fescue*	<i>Festuca spp</i>
Fiddleneck, tarweed	<i>Amsinckia lycopsoides</i>
Filaree	<i>Erodium spp</i>
Fireweed*(willowweed)	<i>Epilobium angustifolium</i>
Fleabane, flax-leaved	<i>Conyza bonariensis</i>
Flixweed	<i>Descurainia Sophia</i>
Foxtail, yellow	<i>Setaria lutescens</i>
Goldenrod	<i>Solidago spp</i>
Groundsel, common	<i>Senecio vulgaris</i>
Hawkweed	<i>Hieracium spp</i>
Horseweed/marestail	<i>Conyza canadensis</i>
Jimsonweed	<i>Datura stramonium</i>
Lambsquarters, common	<i>Chenopodium album</i>
Lettuce, Miner's	<i>Montia perfoliata</i>
Lettuce, prickly*	<i>Lactuca serriola</i>
Mustard, blue	<i>Chorispora tenella</i>
Mustard, Jim Hill (tumble)	<i>Sisymbrium altissimum</i>
Orchardgrass *	<i>Dactylis glomerata</i>
Orchardgrass (seedling)	<i>Dactylis glomerata</i>
Panicgrass (witchgrass)	<i>Panicum capillare</i>
Panicum, fall	<i>Panicum dichotomiflorum</i>
Pearly everlasting	<i>Anaphalis margaritacea</i>
Pennycress, field	<i>Thlaspi arvense</i>
Pigweed, redroot	<i>Amaranthus retroflexus</i>
Quackgrass	<i>Agropyron repens</i>
Radish, wild	<i>Raphanus raphanistrum</i>
Ragweed, common	<i>Ambrosia elatior</i>
Raspberry* (briar)	<i>Rubus spp</i>
Rocket, London	<i>Sisymbrium irio</i>
Rocket, common yellow	<i>Barbarea vulgaris</i>
Ryegrass, Italian (annual)	<i>Lolium multiflorum</i>
Ryegrass, perennial*	<i>Lolium perenne</i>
Salsify	<i>Tragopogon spp</i>
Shepherdspurse	<i>Capsella bursa-pastoris</i>
Smartweed, Pennsylvania	<i>Polygonum pennsylvanicum</i>
Sorrel, red	<i>Rumex acetosella</i>
Sorrel, sheep	<i>Rumex angiocarpus</i>
Spurry, corn	<i>Spergula arvensis</i>
Strawberry, wild	<i>Fragaria virginiana</i>
Tansymustard (pinnate)	<i>Descurainia pinnata</i>
Tea, Mexican*	<i>Chenopodium ambrosioides</i>
Velvetgrass	<i>Holcus lanatus</i>
Yarrow	<i>Achillea spp</i>
<b>2.4 to 3.6 Lbs/acre</b>	
Dogbane**	<i>Apocynum spp</i>
Meadow-sweet	<i>Filipendula ulmaria</i>
Blackberry, trailing	<i>Rubus ursinus</i>
Laurel, sheep	<i>Kalmia angustifolia</i>
Rose, wild**	<i>Rosa spp</i>

\* Suppression – a visible reduction in plant population and/or plant vigor as compared to an untreated area and generally not accepted as control.

# CHRISTMAS TREES

DuPont™ VELPAR® DF is recommended for control of certain weeds where the following species are grown:

Fir, Douglas (western US only)	<i>Pseudotsuga menziesii</i>
Fir, Fraser	<i>Abies fraseri</i>
Fir, grand	<i>Abies grandis</i>
Fir, noble	<i>Abies procera</i>
Pine, Austrian	<i>Pinus nigra</i>
Pine, loblolly	<i>Pinus taeda</i>
Pine, ponderosa	<i>Pinus ponderosa</i>
Pine, Scotch	<i>Pinus sylvestris</i>
Spruce, Sitka	<i>Picea sitchensis</i>

Do not use VELPAR® DF on Christmas trees in the following states:

Alabama	Louisiana	New Jersey	Texas
Arkansas	Maine	New York	Vermont
Connecticut	Maryland	North Carolina	Virginia
Delaware	Massachusetts	Pennsylvania	West Virginia
Georgia	Mississippi	Rhode Island	
Florida	New Hampshire	South Carolina	

## APPLICATION INFORMATION

### EASTERN US

Apply VELPAR® DF as a broadcast spray in the spring prior to bud break. If application is made after bud break, use directional spray equipment to prevent contact with foliage.

### WESTERN US

Areas of greater than 20 inches annual rainfall - VELPAR® DF may be applied as a broadcast spray in the spring prior to conifer bud break. If application is made after bud break, use directional spray equipment to prevent contact with foliage.

Areas of less than 20 inches annual rainfall - VELPAR® DF may be applied in the fall before the soil freezes or in the spring after snow cover melts, but before conifer bud break occurs.

### USE RATES

The rates listed below are for broadcast application. For band application, use proportionately less; for example, use 1/2 of the broadcast rates when treating a 3-foot band where row spacing is 6 feet. Use the higher end of the rate range on the heavier soil type.

Do not use more than one application of VELPAR® DF per year.

Soils	VELPAR® DF (Lb/Acre)	
	First Year Plantings	Established Trees
<b>Coarse Texture</b>		
Loamy sand, sandy loam (50-85% sand)	1 1/3	1 1/3 - 1 2/3
<b>Medium Texture</b>		
Loam, silt loam silt, clay loam, sandy clay loam	1 1/3 - 1 2/3	1 2/3 - 2 1/3
<b>Fine Texture</b>		
Silty clay loam, clay loam, sandy clay, silty clay, clay	1 2/3 - 2	2 1/3 - 2 2/3

**First year plantings** - Transplant stock that is 2 years old or more (1 year old for loblolly pine). Apply VELPAR® DF only if rainfall has settled the soil around the base and root systems of the transplants.

**Established trees** - Trees that have been planted in the plantation for 1 year or more.

## WEEDS CONTROLLED

VELPAR® DF is recommended for the control or suppression of the following weed species in Christmas tree crops:

Aster, heath*	<i>Aster ericoides</i>
Barnyardgrass	<i>Echinochloa crus-galli</i>
Bentgrass, common	<i>Agrostis alba</i>
Bluegrass, annual	<i>Poa annua</i>
Bromegrass	<i>Bromus spp</i>
Burnweed, American*	<i>Erechtites hieracifolius</i>
Carrot, wild	<i>Daucus carota</i>
Crabgrass*	<i>Digitaria spp</i>
Curly dock*	<i>Rumex crispus</i>
Daisy, oxeye	<i>Chrysanthemum leucanthemum</i>
Dandelion, common*	<i>Taraxacum officinale</i>
Dandelion, false* (spotted catsear)	<i>Hypochaeris radicata</i>
Fescue*	<i>Festuca spp</i>
Fleabane	<i>Conyza spp</i>
Foxtail	<i>Setaria spp</i>
Goldenrod*	<i>Solidago spp</i>
Groundsel, common	<i>Senecio vulgaris</i>
Horseweed/marestail	<i>Conyza canadensis</i>
Orchardgrass *	<i>Dactylis glomerata</i>
Ragweed, common	<i>Ambrosia elatior</i>
Ryegrass, Italian (annual)	<i>Lolium multiflorum</i>
Ryegrass, perennial*	<i>Lolium perenne</i>
Smartweed, Pennsylvania	<i>Polygonum pennsylvanicum</i>
Velvetgrass, common	<i>Holcus lanatus</i>

\* Suppression – a visible reduction in plant population and/or plant vigor as compared to an untreated area and generally not accepted as control.

## SPRAY EQUIPMENT

VELPAR® DF may be applied by ground equipment or by air.

Select a spray volume that will ensure a thorough and uniform application. Apply a minimum of 5 gallons per acre by air and a minimum of 10 gallons per acre by ground equipment.

## USE PRECAUTIONS CHRISTMAS TREES

- Do not use VELPAR® DF in nurseries, seed beds, or ornamental plantings.
- Do not add a surfactant in applications over the top of conifers.
- Weed control results from spring applications depend on sufficient moisture to activate VELPAR® DF.
- Do not cut treated vegetation for forage or hay nor graze domestic animals on treated areas for 60 days following application.
- Poor weed and brush control may result from the following:
  - Heavy duff or slash present at the time of application.
  - Use on poorly drained sites.
  - Applications made when soil is saturated with water and rain is imminent within 24 hours.

–Applications to soils high in organic matter (greater than 5%).

- Injury may occur when DuPont™ VELPAR® DF is used on the following:
  - Trees that show poor vigor, insect damage, disease, winter injury, or other stress conditions.
  - Any soil containing less than 1% organic matter.
  - Loamy sand or sandy loam with less than 2% organic matter (except Jeffrey Pine and Ponderosa Pine).
  - Foliage after bud break.
  - Gravelly or rocky soils, exposed subsoils, clay knobs, sand, or sandy soil with 85% or more sand.

## PINEAPPLE

VELPAR® DF is recommended for control of certain weeds in pineapple.

### APPLICATION INFORMATION

Mix the proper amount of VELPAR® DF in water. Add a surfactant at the rate of 0.25% V/V.

Use the lower rates on coarse-textured soils or in areas where rainfall exceeds 65 inches per year. Use the higher rates on fine-textured soils or in areas where rainfall is less than 65 inches per year.

**Intercrop period** - Apply VELPAR® DF as a broadcast spray in 100–400 gallons of water per acre at the rate of 1/3 - 2 1/3 pounds per acre. For aerial application, use at least 10 gal water per acre.

**Post mulch, preplant** - Apply VELPAR® DF as a broadcast spray in 100–400 gallons of water per acre at the rate of 1/3 - 2 1/3 pounds per acre.

**Post plant, before planted cuttings start active growth** - Apply VELPAR® DF as a broadcast spray in 100–400 gallons of water per acre at the rate of 1/3 - 2 1/3 pounds per acre. A post-plant application should be made after planted cuttings start to grow only when weed growth has escaped control by other herbicide applications.

**Prior to forcing first ratoon** - Apply VELPAR® DF as a broadcast spray in 100–400 gallons of water per acre at the rate of 1/3 - 2 1/3 pounds per acre.

**Directed postemergence (pineapple and weeds) inter-space application** - Apply VELPAR® DF as a directed spray 3–10 months after planting in 50–200 gallons of water per acre (broadcast basis) at the rate of 1/3 - 2 1/3 pounds per acre (broadcast basis) using a stroller boom or knapsack.

**Directed spot treatments for perennial grasses before floral induction** - Spray perennial grasses postemergence to wet (50–200 gallons per acre depending on size) with 1 1/3 - 2 1/3 pounds per 100 gallons of water as a spot treatment.

**Treatments to field edges and roadsides** - Apply VELPAR® DF at 2 1/3 - 4 8/10 pounds per acre in 100–400 gallons of water.

## WEEDS CONTROLLED

VELPAR® DF is recommended for the control or suppression of the following species in pineapple crops:

Ageratum, tropic	<i>Ageratum conyzoides</i>
Balsamapple	<i>Momordica charantia</i>
Castorbean	<i>Ricinus communis</i>
Crabgrass	<i>Digitaria spp</i>
Crotalaria	<i>Crotalaria spp</i>
Dallisgrass	<i>Paspalum dilatatum</i>
Guineagrass	<i>Panicum maximum</i>
Junglerice	<i>Echinochloa colonum</i>
Kao haole*	<i>Leucaena glauca</i>
Moana loa vine*	<i>Canavalia cathartica</i>
Morningglory	<i>Ipomoea spp</i>
Oxalis	<i>Oxalis spp</i>
Popolo	<i>Solanum sandwicense</i>
Richardsonium	<i>Richardsonia spp</i>
Vaseygrass	<i>Paspalum urvillei</i>

\* Suppression – a visible reduction in plant population and/or plant vigor as compared to an untreated area and generally not accepted as control.

### USE PRECAUTIONS - PINEAPPLE

- Do not exceed 4.8 lb VELPAR® DF per acre per crop.
- Do not apply VELPAR® DF within 181 days of harvest.

## SUGARCANE

VELPAR® DF is recommended for selective weed control in sugarcane except in the State of Florida.

### APPLICATION INFORMATION

Apply a single treatment of VELPAR® DF per year using a fixed-boom sprayer and a minimum of 25 gallons per acre unless otherwise directed.

### HAWAII

Apply VELPAR® DF pre- or postemergence at the following rates for the indicated soil texture:

Soils	DuPont™ VELPAR® DF (Lb/Acre)	
	(Plus surfactant 0.25% by volume)	
<b>Coarse Texture</b>		
Sand, loamy sand, sandy loam	2/3 - 1	2/10
<b>Medium Texture</b>		
Loam, silt loam, silty clay loam	2/3 - 2	1/3
<b>Fine Texture</b>		
Clay, gray hydromorphic clay	2 1/3 - 4	8/10

Use the higher levels of the recommended dosage ranges on soils high in organic matter. Do not apply more than twice the highest recommended rate for the indicated soil texture per crop (18–24 months).

A surfactant is recommended for all uses.

For preemergence use only, DuPont™ VELPAR® DF may be applied with aerial equipment using at least 10 gallons of spray per acre.

For spot treatments of emerged weeds, VELPAR® DF may be applied with a knapsack sprayer in concentrations of 0.6 - 4.8 pounds per 100 gallons of water. Apply a sufficient volume to thoroughly wet weed foliage, but do not exceed 40 gallons of spray per treated acre. Use the lower concentrations on coarse-textured soils that are low in organic matter, and use the higher concentrations on fine-textured soils that are high in organic matter.

## LOUISIANA

Apply 2/3 - 1 2/10 pound of VELPAR® DF per acre broadcast in the fall before sugarcane emerges or in the spring before active cane tillering begins. Fall treatments of 2/3 - 1 2/10 pound per acre may be followed by a spring treatment of 2/3 - 1 2/10 pound per acre. Do not apply more than 2 pound per year. Use the lower rates on coarse textured soils and the higher rates on fine textured soils.

## PUERTO RICO

For preemergence treatments, apply 1/3 - 2/3 pound of VELPAR® DF per acre.

For postemergence treatments, apply 1/3 - 2/3 pound of VELPAR® DF per acre to weeds after they have emerged. Use the lower rates on coarse-textured soils and the higher rates on fine-textured soils (high in clay or organic matter). Each ratoon may receive up to 2/3 pound of VELPAR® DF per acre.

For spot treatment of emerged weeds, VELPAR® DF may be applied with a knapsack sprayer in concentrations of 1/3 - 2/3 pound per 100 gallons of water. Apply a sufficient volume to wet the weed foliage. Do not exceed 100 gallons of spray per treated acre. Use the lower concentration on coarse-textured soils and the higher concentration on fine-textured soils.

Note: Since it is difficult to calibrate “spot” knapsack applications, extra care must be taken not to exceed the rate equivalent of the maximum of 2/3 pound VELPAR® DF per acre.

Do not apply more than 1 1/3 pound of VELPAR® DF per acre per crop season.

## TEXAS

Apply 2/3 - 2 1/3 pound of VELPAR® DF per acre. On plant cane, apply the herbicide before the cane emerges or as a directed layby treatment. On stubble cane, apply VELPAR® DF preemergence (up to the 3-leaf stage) or as a directed layby treatment. A pre- or early postemergence treatment may be followed by a layby treatment, provided at least 60 days have elapsed and 3 inches of rainfall or sprinkler irrigation have occurred since the first treatment.

Do not apply more than 2 1/3 pound of VELPAR® DF per acre per season.

Use the following rates according to the different soil textures:

Soils	VELPAR® DF (Lb/Acre)	
	Preemergence	+ Layby
<b>Coarse Texture*</b>		
Sandy loam	1/3	1/3
<b>Medium Texture</b>		
Loam, silt loam	9/10	9/10
<b>Fine Texture</b>		
Clay loam	1 1/3	1 1/3

\* With at least 2% organic matter

On dormant cane, a surfactant may be added to the spray mixture to increase control of emerged weeds.

## WEEDS CONTROLLED

VELPAR® DF is recommended for the control or suppression of the following species in sugarcane crops:

Ageratum, tropic*	<i>Ageratum conyzoides</i>
Alexandergrass	<i>Brachiaria plantaginea</i>
Balsamapple	<i>Momordica charantia</i>
Barnyardgrass	<i>Echinochloa crus-galli</i>
Bermudagrass*	<i>Cynodon dactylon</i>
Burnweed, American (fireweed)	<i>Erechtites hieracifolius</i>
Chickweed, common	<i>Stellaria media</i>
Crabgrass, large	<i>Digitaria sanguinalis</i>
Crabgrass, smooth	<i>Digitaria ischaemum</i>
Crotalaria, fuzzy	<i>Crotalaria incana</i>
Crotalaria, showy	<i>Crotalaria spectabilis</i>
Cuphea, tarweed	<i>Cuphea carthagenensis</i>
Dallisgrass	<i>Paspalum dilatatum</i>
Fingergrass, radiate	<i>Chloris radiata</i>
Fingergrass, swollen	<i>Chloris barbata</i>
Foxtail, bristly	<i>Setaria verticillata</i>
Foxtail, yellow	<i>Setaria lutescens</i>
Geranium, Carolina	<i>Geranium carolinianum</i>
Goosegrass	<i>Elysiue indica</i>
Guineagrass	<i>Panicum maximum</i>
Henbit	<i>Lamium amplexicaule</i>
Itchgrass*	<i>Rottboellia cochinchinensis</i>
Job's-tears	<i>Coix lacryma</i>
Johnsongrass (seedling)	<i>Sorghum halepense</i>
Junglerice	<i>Echinochloa colonum</i>
Lambsquarters, common	<i>Chenopodium album</i>
Millet, Texas	<i>Panicum texanum</i>
Morningglory, hairy	<i>Ipomoea pentaphylla</i>
Morningglory, threelobe	<i>Ipomoea triloba</i>
Mustard, wild	<i>Sinapis arvensis</i>
Oxalis	<i>Oxalis spp</i>
Paintbrush, Flora's	<i>Emilia sonchifolia</i>
Panicum, browntop	<i>Panicum fasciculatum</i>
Paspalum, ricegrass	<i>Paspalum orbiculare</i>
Paspalum, sour	<i>Paspalum conjugatum</i>
Pigweed, redroot	<i>Amaranthus retroflexus</i>
Pigweed, slender (green)	<i>Amaranthus viridis</i>
Pigweed, smooth	<i>Amaranthus chlorostachys</i>
Popolo	<i>Solanum sandwicense</i>
Purslane, common	<i>Portulaca oleracea</i>
Sandbur	<i>Cenchrus spp</i>
Sensitive plant (hila hila)	<i>Mimosa spp</i>
Signalgrass, broadleaf	<i>Brachiaria platyphylla</i>
Sowthistle, common	<i>Sonchus oleraceus</i>
Spanishneedles	<i>Bidens bipinnata</i>
Sprangletop	<i>Leptochloa spp</i>
Spurge, prostrate	<i>Euphorbia humistrata</i>
Spurge, graceful	<i>Chamaesyce hypericifolia</i>
Sunflower	<i>Helianthus spp</i>
Vaseygrass	<i>Paspalum urvillei</i>
Waltheria (hia loa)	<i>Waltheria spp</i>

\* Suppression – a visible reduction in plant population and/or plant vigor as compared to an untreated area and generally not accepted as control.

## USE PRECAUTIONS - SUGARCANE

- Do not plant any crop other than sugarcane following an application of DuPont™ VELPAR® DF.
- Do not feed sugarcane forage to livestock.
- Do not apply VELPAR® DF:
  - Within 180 days of harvest in Hawaii.
  - Within 234 days of harvest in Louisiana.
  - Within 288 days of harvest in Puerto Rico.
  - Within 234 days of harvest in Texas.
- To avoid injury to sugarcane, observe the following precautions:
  - Do not use VELPAR® DF on cane that shows poor vigor because of insect damage, disease, or winter injury, or shows symptoms of other stress conditions such as drought stress.
  - Do not add a surfactant in applications unless otherwise specified.
  - Do not use VELPAR® DF on gravelly or rocky soils, thinly covered subsoils, or coarse-textured soils (sands to sandy loams) with less than 1% organic matter.
  - Temporary chlorosis of the crop may result from application over emerged cane. Applications during active cane growth should be directed to cover the weeds and soil while minimizing crop contact.
  - Do not use VELPAR® DF on varieties known to be susceptible to herbicides.
- Extremely heavy rainfall after application may result in poor weed control and/or crop injury, especially if the application is made to dry soil.

## FORESTRY

### SITE PREPARATION

VELPAR® DF is recommended for weed and brush control in areas where the following species are grown:

#### EASTERN US AND LAKE STATES

Fir, balsam  
Pine, Austrian  
Pine, loblolly  
Pine, longleaf  
Pine, ponderosa  
Pine, red  
Pine, Scotch  
Pine, shortleaf  
Pine, slash  
Pine, Virginia  
Spruce, black  
Spruce, red  
Spruce, white

*Abies balsamea*  
*Pinus negra*  
*Pinus taeda*  
*Pinus palustris*  
*Pinus ponderosa*  
*Pinus resinosa*  
*Pinus sylvestris*  
*Pinus echinata*  
*Pinus elliotii*  
*Pinus virginiana*  
*Picea mariana*  
*Picea rubens*  
*Picea glauca*

#### WESTERN US

Fir, Douglas  
Fir, grand  
Fir, Noble  
Fir, white  
Pine, Jeffrey  
Pine, lodgepole  
Pine, ponderosa  
Spruce, blue  
Spruce, Englemann  
Spruce, Sitka

*Pseudotsuga menziesii*  
*Abies grandis*  
*Abies procera*  
*Abies concolor*  
*Pinus jeffreyi*  
*Pinus contorta*  
*Pinus ponderosa*  
*Picea pungens*  
*Picea englemannii*  
*Picea sitchensis*

## APPLICATION INFORMATION

### EASTERN US

Apply VELPAR® DF from early spring to early summer after hardwoods have broken bud and before the foliage has hardened off.

Soils	VELPAR® DF (Lb/Acre)
	Eastern US
<b>Coarse Texture</b>	
Sand, loamy sand, sandy loam	2 2/3 - 4
<b>Medium Texture</b>	
Loam, silt loam, sandy clay loam	4 - 5 1/3
<b>Fine Texture</b>	
Silty clay loam, clay loam, sandy clay, silt, silty clay, clay	5 1/3 - 6 2/3

The rates listed are for broadcast application. Use the lower rates on coarse textured soils and soils low in organic matter. Use the higher rates on fine textured soils and soils high in organic matter. Use the higher rates where weeds identified with an \* in the Weeds Controlled list predominate.

### WESTERN US

For **SITE PREPARATION**, VELPAR® DF may be applied at 1.3 to 4 pounds per acre. Use the lower rates on coarse textured soils and soils low in organic matter. Use the higher rates on fine textured soils and soils high in organic matter. Use the higher rates where weeds identified in this label as “suppression” predominate.

In areas where other conifer species may be mixed in with the conifers listed above, VELPAR® DF may be applied if the user has prior experience with VELPAR® DF on the other conifer species. With no prior experience, it is recommended that either a small area of plantings be tested for conifer safety prior to treating larger areas, or make no application of VELPAR® DF in these areas within the site preparation area. Conifer species that are sensitive to VELPAR® (hexazinone) DF, such as, sugar pine and western larch, require 18 months before interplanting on treated sites.

Applications made to shelter wood sites may also result in mortality to over-story conifers. Factors that may influence conifer sensitivity in these sites could include application rate, conifer species, soil characteristics, uniformity of spray distribution across the treatment swath and environmental stress.

**Rain Belt** (areas of high spring rainfall): For best results, apply in late winter or spring when weeds and brush are actively growing.

**Snow Belt** (areas of low spring rainfall): For best results, apply in the fall before soil freezes, or in the spring after snow cover melts in anticipation of rainfall. Weed and brush control results from spring applications will be dependent on sufficient rainfall following application to activate VELPAR® DF.

## PLANTS CONTROLLED

DuPont™ VELPAR® DF is recommended for the control or suppression of the following species in site preparations for forestry crops:

### HERBACEOUS PLANTS

Asters	
Aster, heath*	<i>Aster ericoides</i>
Barnyardgrass	<i>Echinochloa crus-galli</i>
Bentgrass	<i>Agrostis spp</i>
Bluegrass, annual	<i>Poa annua</i>
Bromegrass	<i>Bromus spp</i>
Carrot, wild	<i>Daucus carota</i>
Crabgrass*	<i>Digitaria spp</i>
Daisy, oxeye	<i>Chrysanthemum leucanthemum</i>
Dandelion, common*	<i>Taraxacum officinale</i>
Dandelion, false* (spotted catsear)	<i>Hypochaeris radicata</i>
Dock, curly*	<i>Rumex crispus</i>
Elksedge	<i>Carex geyseri</i>
Fescue*	<i>Festuca spp</i>
Fireweed*(willowweed)	<i>Epilobium angustifolium</i>
Fleabane	<i>Conyza spp</i>
Foxtail	<i>Setaria spp</i>
Goldenrod*	<i>Solidago spp</i>
Groundsel, common	<i>Senecio vulgaris</i>
Horseweed/marestail	<i>Conyza canadensis</i>
Orchardgrass *	<i>Dactylis glomerata</i>
Pinegrass	<i>Calamagrostis rubescens</i>
Quackgrass*	<i>Agropyron repens</i>
Ragweed, common	<i>Ambrosia elatior</i>
Ryegrass, Italian (annual)	<i>Lolium multiflorum</i>
Ryegrass, perennial*	<i>Lolium perenne</i>
Smartweed, Pennsylvania	<i>Polygonum pennsylvanicum</i>
Squawcarpet	<i>Ceanothus prostratus</i>
Thistle, Canada*	<i>Cirsium arvense</i>
Velvetgrass, common	<i>Holcus lanatus</i>

### WOODY PLANTS

Ash	<i>Fraxinus spp</i>
Aspen, big tooth	<i>Populus grandidentata</i>
Aspen, trembling	<i>Populus tremuloides</i>
Birch	<i>Betula spp</i>
Blackgum	<i>Nyssa sylvatica</i>
Cherry, black	<i>Prunus serotina</i>
Deerbrush	<i>Ceanothus integerrimus</i>
Dogwood, flowering*	<i>Cornus florida</i>
Elm	<i>Ulmus spp</i>
Hawthorn	<i>Crataegus spp</i>
Hazel	<i>Corylus spp</i>
Hickory	<i>Carya spp</i>
Honeysuckle*	<i>Lonicera spp</i>
Manzanita, Greenleaf	<i>Arctostaphylos patula</i>
Maple, red*	<i>Acer rubrum</i>
Oaks	<i>Quercus spp</i>
Poplar, balsam	<i>Populus balsamifera</i>
Snowbrush (varnishleaf)	<i>Ceanothus velutinus</i>
Sourwood*	<i>Oxydendrum arboretum</i>
Sweetgum	<i>Liquidambar spp</i>
Willows	<i>Salix spp</i>

\*Suppression is a visible reduction in plant competition (reduced population and/or vigor) as compared to an untreated area. Degree of suppression will vary with rate applied, size of plants at application and environmental conditions following treatment. Species indicated above, especially resprouts of these species, may require a follow up treatment for acceptable control. Burning, as a follow up treatment, will enhance control of resprouts.

Within several weeks after VELPAR® DF activation by rainfall, affected vegetation may be burned, if desired. This burn may further enhance control of vegetation. Burn the

vegetation only after any residual stand is completely defoliated, at least twice, allowing for sufficient root uptake of VELPAR® DF. In the West, results may take one to two years in areas of low rainfall.

### SPRAY EQUIPMENT

When applied as a liquid spray using water as the carrier, VELPAR® DF may be applied by ground equipment or by air (helicopter only).

For ground application, use enough water for thorough coverage, usually a minimum of 25 gallons per acre. For aerial applications, use at least 5 gallons of water per acre.

### GRID APPLICATION

Mix 2 2/3 pounds of VELPAR® DF with sufficient water to make one gallon of suspension and thoroughly agitate. Intermittent agitation may be required to maintain the VELPAR® DF in suspension.

Apply the VELPAR® DF suspension directly to the soil surface in a grid pattern using an exact delivery handgun applicator. This equipment delivers a thin stream of predetermined volume. VELPAR® DF should be applied during the period from hardwood bud break to early summer.

Application rate and grid pattern will depend on soil texture and woody plant composition. Use the lower rates on coarse textured soils and when the major component of the hardwoods are susceptible species. Use the high rates on fine-textured soils and where weeds identified in this label as “partial control or suppression” predominate.

#### Application Patterns and Rates For VELPAR® DF Suspension

	ML/Spot	Grid (Ft)	Lb/Acre
<b>Coarse</b>	0.6	3 X 3	2
	2.0	4 X 4	4
	3.1	4 X 6	4
<b>Medium/Fine</b>	1.6	3 X 3	5.3
	2.8	4 X 4	5.3
	3.5	4 X 4	6.6
	5.2	4 X 6	6.6

### BASAL (SOIL)

#### SINGLE STEM TREATMENTS

Mix 2 2/3 pounds of VELPAR® DF with sufficient water to make one gallon of suspension and thoroughly agitate. Apply the VELPAR® DF suspension with an exact-delivery handgun applicator. This equipment delivers a thin stream of predetermined volume when triggered. Apply the VELPAR® DF suspension at the rate of 2 to 4 ml for each inch of stem diameter at breast height. Direct the treatment to the soil within 3 feet of the root collar of woody plants to be controlled.

For multi-stemmed and low-growing brush that have stem diameters that are difficult to determine, apply the DuPont™ VELPAR® DF suspension at the rate of 2 to 4 ml per 3 feet of canopy width. For tall, slender (columnar) brush types, apply 4 to 8 ml per 3 feet of height. Base the rate on whichever canopy dimension is greater (width or height). Apply the lower volumes for coarse textured soils or soils with low organic matter soils and the higher volumes for fine textured soils or soils with high organic matter.

When treating brush that requires more than a single delivery of the VELPAR® DF suspension, apply subsequent deliveries equally spaced around the target plant. If treating brush on sloping sites, apply most of the suspension on the uphill side of the stem. If treating resprouts from brush disturbed by cutting or other mechanical methods, the rate of application should be proportional to the original tree size, not just the size of sprout regrowth.

## USE PRECAUTIONS SITE PREPARATION

Where burning is desired, burn the vegetation only after any residual brush has completely defoliated, at least twice, allowing for sufficient root uptake of VELPAR® DF.

Following harvest, allow sufficient time for stumps and injured trees to adequately resprout before applying VELPAR® DF.

## FORESTRY – RELEASE

VELPAR® DF is recommended for conifer release where the following species are grown:

### EASTERN US AND LAKE STATES

Fir, balsam	<i>Abies balsamea</i>
Pine, loblolly	<i>Pinus taeda</i>
Pine, longleaf	<i>Pinus palustris</i>
Pine, red	<i>Pinus resinosa</i>
Pine, shortleaf	<i>Pinus echinata</i>
Pine, slash	<i>Pinus elliotii</i>
Pine, Virginia	<i>Pinus virginiana</i>
Spruce, black	<i>Picea mariana</i>
Spruce, Norway	<i>Picea abies</i>
Spruce, red	<i>Picea rubens</i>
Spruce, white	<i>Picea glauca</i>

### WESTERN US

Fir, Douglas	<i>Pseudotsuga menziesii</i>
Fir, grand	<i>Abies grandis</i>
Fir, Noble	<i>Abies procera</i>
Fir, white	<i>Abies concolor</i>
Hemlock, Western	<i>Tsuga heterophylla</i>
Pine, Jeffrey	<i>Pinus jeffreyi</i>
Pine, lodgepole	<i>Pinus contorta</i>
Pine, ponderosa	<i>Pinus ponderosa</i>
Spruce, blue	<i>Picea pungens</i>
Spruce, Englemann	<i>Picea englemannii</i>
Spruce, Sitka	<i>Picea sitchensis</i>

## APPLICATION INFORMATION

### EASTERN US

Apply VELPAR® DF from early spring to early summer after hardwoods have broken bud and before full leaf expansion.

Applications made over the top of pines may result in excessive pine injury under conditions of high humidity and temperature (80 degrees F).

### WESTERN US

**Rainbelt** (areas of high spring rainfall): For best results, apply in late winter or spring when brush is actively growing, but prior to conifer budbreak. If application is made after bud break, use directional spray equipment to prevent contact with conifer foliage, as injury may result.

**Snowbelt** (areas of low spring rainfall): For best results, apply in the fall before soil freezes and after the final resting bud has hardened on the conifers. Or, spring applications may be made after snow cover melts in anticipation of rainfall prior to conifer budbreak. Brush control results from spring treatments will be dependent on sufficient rainfall following application to activate VELPAR® DF.

### USE RATES

The rates listed below are for broadcast application. Do not use more than one application of VELPAR® DF per year. Use the higher rate range for the harder to control\* (suppression) species in the PLANTS CONTROLLED listings of the Site Prep and Release sections.

### EASTERN US

<u>Crop Species</u>	<u>Soil Description</u>	<u>VELPAR® DF (Lb/Acre) Established Trees</u>
Loblolly pine	Loamy sand,	
Longleaf pine	sandy loam	1 1/3 - 2
Shortleaf pine	Loam, silt loam,	
Virginia pine	silt, sandy clay loam	1 1/3 - 2 2/3
Slash pine	Silty clay loam, clay loam, sandy clay, silty clay, clay	3 - 4
Red pine	Loamy sand, sandy loam	1 1/3 - 2 2/3
	Loam, silt loam, silt, sandy clay loam	2 2/3 - 4
	Silty clay loam, clay loam, sandy clay, silty clay, clay	4 - 5 1/3

### Established Trees

- 4 years of age from transplanting on coarse-textured soils
- 3 years of age from transplanting on medium-textured soils
- 2 years of age from transplanting for Red Pine

### WESTERN US

Application rates by soil type for VELPAR® DF in the following western conifers: Blue spruce, Douglas fir, Englemann spruce, Grand fir, Jeffrey pine, Lodgepole pine, Noble fir, Ponderosa pine, Sitka spruce, Western hemlock and White fir.

<b>Soil Description</b>	<b>DuPont™ VELPAR® DF (Lb/Acre)</b>
Loamy sand, sandy loam	1 1/3 - 3
Loam, silt loam, sandy clay loam	2 2/3 - 4
Silt, silty clay loam, clay loam, sandy clay, silty clay, clay	3 - 4

For first year plantings utilizing bare root stock, treat only transplant stock that is 2 years old (2-0, 1-1) or more, except (1-0) for Ponderosa and Jeffrey pines. Apply VELPAR® DF only if rainfall has settled the soil around the base and root systems of the transplants.

## BRUSH CONTROLLED

VELPAR® DF is recommended for the control or suppression of the following species in conifer release sites:

Ash	<i>Fraxinus spp</i>
Aspen, big tooth	<i>Populus grandidentata</i>
Aspen, trembling	<i>Populus tremuloides</i>
Birch	<i>Betula spp</i>
Elder, box	<i>Acer negundo</i>
Brambles	<i>Rubus spp</i>
Cherry, black	<i>Prunus serotina</i>
Cherry, pin	<i>Prunus pensylvanica</i>
Deerbrush	<i>Ceanothus integerrimus</i>
Dogwood, flowering*	<i>Cornus florida</i>
Elm	<i>Ulmus spp</i>
Hawthorn	<i>Crataegus spp</i>
Hazel	<i>Corylus spp</i>
Honeysuckle*	<i>Lonicera spp</i>
Manzanita, Greenleaf	<i>Arctostaphylos patula</i>
Maple, red*	<i>Acer rubrum</i>
Oaks	<i>Quercus spp</i>
Poplar, balsam	<i>Populus balsamifera</i>
Snowbrush (varnishleaf)	<i>Ceanothus velutinus</i>
Sourwood*	<i>Oxydendrum arboretum</i>
Sweetgum	<i>Liquidambar spp</i>
Willows	<i>Salix spp</i>

\* Suppression – a visible reduction in plant population and/or plant vigor as compared to an untreated area and generally not accepted as control.

In addition to brush controlled, herbaceous species listed in Weeds Controlled section of Release-Herbaceous Weed Control may be controlled with these applications.

## SPRAY EQUIPMENT

When applied as a liquid spray using water as the carrier, VELPAR® DF may be applied by ground equipment or by air (helicopter only).

For ground applications, use sufficient spray volume for thorough and uniform coverage of the site to be treated, usually a minimum of 25 gallons per acre. For aerial applications, use a minimum of 5 gallons per acre.

## GRID APPLICATION

Mix 2 2/3 pounds of VELPAR® DF with sufficient water to make one gallon of suspension and thoroughly agitate. Intermittent agitation may be required to maintain the VELPAR® DF in suspension.

Apply the VELPAR® DF suspension directly to the soil surface in a grid pattern using an exact delivery handgun applicator. This equipment delivers a thin stream of predetermined volume. VELPAR® DF should be applied during the period from hardwood bud break to early summer.

Application rate and grid pattern will depend on soil texture and woody plant composition. Use the lower rates on coarse textured soils and when the major component of the hardwoods are susceptible species. Use the high rates on fine-textured soils and where weeds identified in the label as “partial control or suppression” predominate.

### Application Patterns and Rates For VELPAR® DF Suspension

	<b>ML/Spot</b>	<b>Grid (Ft)</b>	<b>Lb/Acre</b>
<b>Coarse</b>	0.5	3 X 4	1.3*
	1.2	3 X 6	2
	2.1	4 X 6	2.6
<b>Medium/Fine</b>	1.2	3 X 3	4
	2.3	3 X 6	4
	1.6	3 X 3	5.3
	3.1	3 X 6	5.3

\* Use on deep sands with pines four years or more of age.

## BASAL (SOIL) SINGLE STEM TREATMENT

Mix 2 2/3 pounds of VELPAR® DF with sufficient water to make one gallon of suspension and thoroughly agitate. Apply the VELPAR® DF suspension with an exact-delivery handgun applicator. This equipment delivers a thin stream of predetermined volume when triggered. Apply the VELPAR® DF suspension at the rate of 2 to 4 ml for each inch of stem diameter at breast height. Direct the treatment to the soil within 3 feet of the root collar of woody plants to be controlled.

For multi-stemmed and low-growing brush that have stem diameters that are difficult to determine, apply the VELPAR® DF suspension at the rate of 2 to 4 ml per 3 feet of canopy width. For tall, slender (columnar) brush types, apply 4 to 8 ml per 3 feet of height. Base the rate on whichever canopy dimension is greater (width or height). Apply the lower volumes for coarse textured soils or low organic matter soils and the higher volumes for fine textured soils or high organic matter soils.

When treating brush that requires more than a single delivery of the VELPAR® DF suspension, apply subsequent deliveries equally spaced around the target plant. If treating brush on sloping sites, apply most of the suspension on the uphill side of the stem. If treating resprouts from brush disturbed by cutting or other mechanical methods, the rate of application should be proportional to the original tree size, not just the size of sprout regrowth.

## USE PRECAUTIONS RELEASE - GRID & SINGLE STEM

- Application of DuPont™ VELPAR® DF spots closer than 36 inches to conifer seedlings in their first season or directly up slope from these seedlings may result in injury or mortality.
- Use VELPAR® DF on seedlings in their first or fourth year and older. Injury may result from use on two and three year old seedlings where root growth is extensive but hardiness is lacking.

## RELEASE HERBACEOUS WEED CONTROL

VELPAR® DF is recommended for controlling herbaceous weeds where the following species are grown:

### EASTERN US

Loblolly pine	Slash pine
Longleaf pine	Red pine

### WESTERN US

Blue spruce	Noble fir
Douglas fir	Ponderosa pine
Engelmann spruce	Sitka spruce
Grand fir	Western hemlock
Jeffrey pine	White fir
Lodgepole pine	

## APPLICATION INFORMATION

### EASTERN US

Apply VELPAR® DF as a broadcast or banded spray in the spring prior to conifer bud break to lessen conifer injury potential.

### WESTERN US

**Rainbelt** (areas of high spring rainfall): For best results, apply as a broadcast or banded spray in the late winter or spring when weeds are actively growing, but prior to conifer budbreak. If application is made after conifer bud break, use directional spray equipment to prevent contact with conifer foliage, as injury may result.

**Snowbelt** (areas of low spring rainfall): For best results, apply as a broadcast or banded spray in the fall before soil freezes and after the final resting bud has hardened on the conifers. Or, spring applications may be made after snow cover melts in anticipation of rainfall prior to conifer budbreak. Weed control results from spring treatments will be dependent on sufficient rainfall following application to activate VELPAR® DF.

## USE RATES

The rates listed below are for broadcast application. For band application, use proportionately less. For example, use 1/2 of the broadcast rates when treating a 3-foot band where row spacing is 6 feet. Use the higher rate range for the harder to control (\*Suppression) weeds listed in the table below.

## EASTERN US

Soil Description	VELPAR® DF (Lb/Acre)	
	First Year Plantings	Established Trees
Loamy sand, sandy loam(50-85% sand)	1 1/3	1 1/3 - 1 2/3
Loam, silt loam, silt, sandy clay loam	1 1/3 - 1 1/2	1 2/3 - 2 1/3
Silty clay loam, clay loam, sandy clay, silty clay, clay	1 1/2 - 1 8/10	2 1/3 - 2 2/3

Red pine only - Refer to recommended rates in the APPLICATION INFORMATION - Eastern US table on page 12.

## WESTERN US

Refer to recommended rates in the APPLICATION INFORMATION - Western US table on page 12.

## WEEDS CONTROLLED

VELPAR® DF is recommended for the control or suppression of the following species in release sites:

Asters	<i>Aster spp</i>
Aster, heath*	<i>Aster ericoides</i>
Barleygrass	<i>Echinochloa crus-galli</i>
Bentgrass	<i>Agrostis spp</i>
Bluegrass, annual	<i>Poa annua</i>
Brackenfern	<i>Pteridium aquilinum</i>
Bromegrass	<i>Bromus spp</i>
Carrot, wild	<i>Daucus carota</i>
Crabgrass*	<i>Digitaria spp</i>
Daisy, oxeeye	<i>Chrysanthemum leucanthemum</i>
Dandelion, common*	<i>Taraxacum officinale</i>
Dandelion, false* (spotted catsear)	<i>Hypochaeris radicata</i>
Dock, curly*	<i>Rumex crispus</i>
Fescue*	<i>Festuca spp</i>
Fireweed*(willowweed)	<i>Epilobium angustifolium</i>
Fleabane	<i>Conyza spp</i>
Foxtail	<i>Setaria spp</i>
Goldenrod*	<i>Solidago spp</i>
Groundsel, common	<i>Senecio vulgaris</i>
Horseweed/marestail	<i>Conyza canadensis</i>
Orchardgrass *	<i>Dactylis glomerata</i>
Panicums	<i>Panicum spp</i>
Pinegrass	<i>Calamagrostis rubescens</i>
Ragweed, common	<i>Ambrosia elatior</i>
Ryegrass, Italian (annual)	<i>Lolium multiflorum</i>
Ryegrass, perennial*	<i>Lolium perenne</i>
Smartweed, Pennsylvania	<i>Polygonum pensylvanicum</i>
Squawcarpet	<i>Ceanothus prostratus</i>
Velvetgrass, common	<i>Holcus lanatus</i>

\* Suppression – a visible reduction in plant population and/or plant vigor as compared to an untreated area and generally not accepted as control.

## **FORESTRY IMPREGNATION ON DRY BULK FERTILIZER**

DuPont™ VELPAR® DF is recommended for impregnating or coating dry bulk fertilizer to be applied on forested sites for the establishment or release of conifer plantations (except longleaf pine) as specified on this label.

### **PLANTS CONTROLLED**

Fertilizer impregnated with VELPAR® DF is recommended for the control and suppression of the weeds and brush identified for the specific applications on this label. Consult the appropriate segment of this label to determine the appropriate rate of VELPAR® DF to be applied per acre. Apply this amount of VELPAR® DF to the volume of fertilizer to be applied per acre.

### **IMPREGNATION EQUIPMENT**

To impregnate or coat the fertilizer use a system consisting of conveyor or closed drum used to blend dry bulk fertilizer.

### **IMPREGNATION INSTRUCTIONS**

To impregnate dry bulk fertilizer with VELPAR® DF, mix the amount as prescribed above in a sufficient quantity of water to uniformly coat the desired amount of fertilizer. Suspensions of VELPAR® DF will require thorough agitation.

Direct the spray nozzles of the impregnation equipment to deliver a fine spray of the mixture toward the fertilizer for thorough coverage while avoiding contact with mixing equipment. The use of a spray pattern indicator may be beneficial to visually determine the uniformity of impregnation.

Uniform impregnation of dry bulk fertilizer may vary. If absorption of the spray is not adequate, the use of an absorptive powder or additive, such as “Microcel E” or “HiSil 233”, may be required to produce a dry, free flowing mixture.

Apply the fertilizer as soon as possible after impregnation for optimum performance. Impregnated fertilizer may become lumpy and difficult to apply following storage.

Diammonium phosphate, potassium chloride, 16-16-16 and 24-4-4 have been successfully impregnated.

### **APPLICATION EQUIPMENT**

Applications of impregnated fertilizer may be made by ground equipment or by air (helicopter or fixed wing). Accurate calibration and patterning of the equipment is essential for uniform distribution of the impregnated fertilizer on the soil surface.

## **USE PRECAUTIONS IMPREGNATED FERTILIZER FOR FORESTRY**

- If fertilizer materials are excessively dusty, use a suitable additive to reduce dust prior to impregnation. Application of dusty fertilizer which has been impregnated may result in off-target drift and injury to desirable vegetation. Such

drift and associated injury may be aggravated by high wind conditions.

- The dry fertilizer must be properly impregnated and uniformly applied to avoid pine injury/mortality and poor weed and brush control.
- Uniform and precise application of the impregnated fertilizer is essential for satisfactory weed and brush control and to minimize pine injury. Overlaps or skips between adjoining swaths or non-uniform distribution of impregnated fertilizer within the swath will deliver poor results and may result in pine injury or mortality.
- Do not impregnate potassium nitrate, sodium nitrate or triple super phosphate fertilizers with VELPAR® DF as herbicidal action will be lost.

## **USE PRECAUTIONS FORESTRY**

- Do not use VELPAR® DF in nurseries, seedbeds, or ornamental plantings.
- On tracts of land where various soil types are present and VELPAR® DF rate selection is difficult, conifer damage or less-than-expected vegetation suppression may occur due to the different rates required for various soil types.
- Poor weed and brush control may result from the following:
  - Heavy duff or slash present at time of application
  - Use on poorly drained sites
  - Applications made when the soil is saturated with water and rain is imminent within 24 hours
  - Applications to soils high in organic matter (greater than 5%)
- Following harvest, allow stumps and injured trees sufficient time to adequately resprout before applying VELPAR® DF.
- Where burning is desired, burn vegetation after any brush has completely defoliated, at least twice, allowing for sufficient root uptake of VELPAR® DF.
- Do not use VELPAR® DF on frozen soils; use in spring after snow melt.
- Do not add a surfactant in applications over the top of conifers.
- Weed control results from spring applications depend on sufficient moisture to activate VELPAR® DF.
- When applying VELPAR® DF after transplanting, wait until rainfall has settled the soil around the base and root systems of the transplants before making the treatment.
- Crop injury may occur when VELPAR® DF is used:
  - On trees that show poor vigor, insect damage, disease, winter injury, or other stress conditions
  - On any soil containing less than 1% organic matter
  - On loamy sand or sandy loam with less than 2% organic matter, except Jeffrey pine and Ponderosa pine
  - On conifer foliage after conifer bud break

–On gravelly or rocky soils, exposed subsoils, clay knobs, sand, or sandy soil with 85% or more sand.

- Do not cut treated vegetation for forage or hay nor graze domestic animals on treated areas for 60 days following application.

## YELLOW POPLAR PLANTINGS

DuPont™ VELPAR® DF is recommended for the control of herbaceous weeds in the establishment of yellow poplar plantations. Applications may be made over the top of planted seedlings after the soil has settled around the root systems but before the seedlings have broken dormancy (bud break). A subsequent application may be made before dormancy break in the Spring of the second year. USE RATES: Use the rate range specified in the "RELEASE-HERBACEOUS WEED CONTROL" section for pine plantations - eastern US.

For ground application, use sufficient spray volume for uniform and thorough coverage of the site to be sprayed, usually a minimum of 25 gallons per acre. For aerial applications, use a minimum of 5 gallons of water per acre. For broader spectrum control VELPAR® DF may be tank mixed with DuPont™ ESCORT® XP herbicide. Add ESCORT® XP at a rate of 1/2 ounce per acre with the prescribed rate of VELPAR® DF.

## USE PRECAUTIONS

### YELLOW POPLAR PLANTINGS

- Applications of VELPAR® DF and tank mixes of VELPAR® DF and DuPont™ ESCORT® XP made to yellow poplar seedlings that are suffering from loss of vigor caused by insects, disease, drought, winter damage, animal damage, excessive soil moisture, planting shock or other stresses may injure or kill the seedlings.
- Applications of VELPAR® DF and tank mixes of VELPAR® DF and ESCORT® XP should only be made after adequate rainfall has closed the planting slit and settled the soil around the roots following transplanting.
- The use of surfactant with VELPAR® DF is not recommended for applications made over the tops of seedlings.
- Careful consideration must be given by an experienced and knowledgeable forester to ensure the specific growth requirements of yellow poplar will be provided by the selected planting site. Treatment of yellow poplar planted on a site inadequate to meet its requirements may injure or kill the seedlings.

## PASTURE / RANGELAND

VELPAR® DF is recommended for control of brush and weeds in pasture.

### BERMUDAGRASS / BAHIAGRASS

VELPAR® DF is recommended for control of smutgrass and other weeds in established stands of bermudagrass and bahiagrass.

## APPLICATION INFORMATION

Make a single application of VELPAR® DF per year when weeds are actively growing.

### WEEDS CONTROLLED - USE RATES

VELPAR® DF effectively controls the following weeds at the rates shown in pastures. Use a lower rate on coarse-textured soils (sand to sandy loam). Use the higher rate on fine-textured soils (clay loam to clay) and on soils high in organic matter.

#### 9/10 - 1 1/2 Lb/Acre

Barley, little	<i>Hordeum pusillum</i>
Barnyardgrass	<i>Echinochloa crus-galli</i>
Dogfennel	<i>Eupatorium capillifolium</i>
Fescue	<i>Festuca spp</i>
Lespedeza	<i>Lespedeza cuneata</i>
Oxalis	<i>Oxalis spp</i>
Passionflower, maypop	<i>Passiflora incarnate</i>
Pepperweed, Virginia	<i>Lepidium virginicum</i>
Pigweed	<i>Amaranthus spp</i>
Smutgrass*	<i>Sporobolus indicus</i>

\* Suppression may result with some of the giant (larger) smutgrass species.

Suppression – a visible reduction in plant population and/or plant vigor as compared to an untreated area and generally not accepted as control.

### SPRAY EQUIPMENT

Apply VELPAR® DF uniformly over the desired area using ground equipment only.

For ground application, use enough water for thorough coverage usually a minimum of 25 gallons per acre. The use of a surfactant is not recommended.

### USE PRECAUTIONS - PASTURE

- Use VELPAR® DF only in stands of bermudagrass and bahiagrass established for at least one year. Do not treat newly sprigged or sodded areas.
- Some temporary discoloration of the bermudagrass or bahiagrass may occur after application.
- Treatment of mixed pastures containing forage species other than bermudagrass or bahiagrass may result in injury or mortality to the other forage species.
- Injury may result when desirable grasses are under stress from drought, insects, disease, cold temperature, or poor fertility.
- Injury to or loss of desirable trees or other plants may result if VELPAR® DF is applied or if equipment is drained or flushed on or near desirable trees or other plants, on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots.
- Severe crop injury may occur if applications are made on gravelly or rocky soils, thinly covered subsoils, or soils with less than 1% organic matter.
- For broadcast pasture applications of VELPAR® DF, do not cut treated vegetation for forage or hay nor graze domestic animals on treated areas for 60 days.

## PASTURE / RANGELAND BRUSH CONTROL

DuPont™ VELPAR® DF is recommended for the control of undesirable brush in pasture or rangeland.

### APPLICATION INFORMATION

Apply VELPAR® DF from late winter through summer, pre-budbreak until new growth hardens off.

In areas where the soil remains frozen during the winter and spring rains are usually inadequate for soil activation, a fall or winter treatment may be applied before the soil freezes.

For rates needed to control the species below, see the **Forestry - Release, Use Rates** section.

### BRUSH CONTROLLED

VELPAR® DF is recommended for the control or suppression of the following brush species in pasture and rangeland:

Alder	<i>Alnus spp</i>
Ash	<i>Fraxinus spp</i>
Aspen	<i>Populus spp</i>
Birch	<i>Betula spp</i>
Blackgum	<i>Nyssa sylvatica</i>
Bay, sweet	<i>Magnolia virginiana</i>
Catclaw acacia	<i>Acacia greggii</i>
Cedar, Eastern red	<i>Juniperus virginiana</i>
Cherry, black	<i>Prunus serotina</i>
Chinaberry*	<i>Melia azedarach</i>
Deerbrush	<i>Ceanothus integerrimus</i>
Dogwood, flowering*	<i>Cornus florida</i>
Elm, American	<i>Ulmus Americana</i>
Elm, Chinese	<i>Ulmus parvifolia</i>
Hackberry, common	<i>Celtis occidentalis</i>
Hawthorn	<i>Crataegus spp</i>
Hazel	<i>Corylus spp</i>
Hickory	<i>Carya spp</i>
Huisache	<i>Acacia farnesiana</i>
Juniper	<i>Juniperus spp</i>
Locust	<i>Robinia spp</i>
Lotebush	<i>Ziziphus obtusifolia</i>
Manzanita, Greenleaf	<i>Arctostaphylos patula</i>
Maple, red	<i>Acer rubrum</i>
Mesquite	<i>Prosopis glandulosa</i>
Mulberry	<i>Morus spp</i>
Oaks	<i>Quercus spp</i>
Osage-orange	<i>Maclura pomifera</i>
Persimmon	<i>Diospyros spp</i>
Plum, wild	<i>Prunus munsoniana</i>
Poplar, balsam	<i>Populus balsamifera</i>
Poplar, yellow	<i>Liriodendron tulipifera</i>
Privet	<i>Ligustrum spp</i>
Rose, multiflora	<i>Rosa multiflora</i>
Sassafras*	<i>Sassafras albidum</i>
Soapweed, small (yucca)	<i>Yucca glauca</i>
Snowbrush (varnishleaf)	<i>Ceanothus velutinus</i>
Sourwood	<i>Oxydendrum arboretum</i>
Sumac	<i>Rhus spp</i>
Sweetgum	<i>Liquidambar spp</i>
Tallow, Chinese	<i>Sapium sebiferum</i>
Waxmyrtle	<i>Myrica cerifera</i>
Whitebrush	<i>Aloysia gratissima</i>
Willow	<i>Salix spp</i>

\* Suppression – a visible reduction in plant population and/or plant vigor as compared to an untreated area and generally not accepted as control.

## SPRAY EQUIPMENT AND APPLICATION TECHNIQUES

Basal (Soil)-Mix 2 2/3 pounds of VELPAR® DF with sufficient water to make one gallon of suspension and thoroughly agitate. Apply the VELPAR® DF suspension with an exact-delivery handgun applicator. This equipment delivers a thin stream of predetermined volume when triggered. Apply the VELPAR® DF suspension at the rate of 2 to 4 ml for each inch of stem diameter at breast height. Direct the treatment to soil within 3 inches of the root collar of woody plants to be controlled. When treating large stems and when more than one delivery of the VELPAR® DF suspension is needed per stem, make applications on opposite sides of the stem. Do not apply more than 1/3 gallon of the VELPAR® DF suspension per acre per year. Intermittent agitation may be required to maintain the VELPAR® DF in suspension.

## USE PRECAUTIONS PASTURE / RANGELAND

- Injury to or loss of desirable trees or other plants may result if VELPAR® DF is applied or if equipment is drained or flushed on or near desirable trees or other plants, on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots.
- Poor weed and brush control may result from the following:
  - Use on poorly drained sites
  - Applications made when the soil is saturated with water and rain is imminent within 24 hours
  - Applications to soils high in organic matter (greater than 5%)
- Following mechanical cutting or clearing, allow stumps and injured trees sufficient time to adequately resprout before applying VELPAR® DF.
- Do not use VELPAR® DF on frozen soils.
- Weed and brush control results depend on sufficient moisture to activate VELPAR® DF.
- When VELPAR® DF is applied as a basal soil treatment, there is no restriction on grazing by domestic animals nor on cutting surrounding vegetation for forage or hay.
- For broadcast pasture applications of VELPAR® DF, do not cut treated vegetation for forage or hay nor graze domestic animals on treated areas for 60 days.

## NON-AGRICULTURAL USES

### 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.

Industrial and Pasture/Rangeland weed and brush control applications as described on this label for DuPont VELPAR DF are not within the scope of the Worker Protection Standard.

The area being treated must be vacated by unprotected persons.

Do not enter or allow entry into treated areas until sprays have dried to perform hand tasks.

### APPLICATION INFORMATION

DuPont™ VELPAR® DF is recommended for general weed and brush control as follows: uncultivated nonagricultural areas (such as, airports, highway, railroad and utility right-of way, sewage disposal areas); uncultivated agricultural areas (non-crop producing, which includes: farmyards, fuel storage areas, fence rows, barrier strips); industrial sites (outdoor, such as, lumberyards, pipeline and tank farms).

### NONCROP INDUSTRIAL SITES

VELPAR® DF is recommended for control of many annual, biennial, and perennial weeds in noncrop, industrial sites.

### APPLICATION INFORMATION

Apply VELPAR® DF as a preemergence or postemergence spray when weeds are actively germinating or growing.

### WEEDS CONTROLLED - USE RATE

VELPAR® DF effectively controls the following weeds when applied at the use rates shown in industrial sites. When applied at lower rates, VELPAR® DF provides short-term control of the weeds listed; when applied at higher rates, weed control is increased and extended.

Use lower rate on coarse-textured soils (sand to sandy loam). Use the higher rate on fine-textured soils (clay loam to clay) and on soils high in organic matter.

## 2 2/3 - 6 2/3 Lb/Acre

Barnyardgrass	<i>Echinochloa crus-galli</i>
Bindweed, field*	<i>Convolvulus arvensis</i>
Bouncingbet*	<i>Saponaria officinalis</i>
Bromegrass	<i>Bromus spp</i>
Buffalograss*	<i>Buchloe dactyloides</i>
Burdock	<i>Arctium spp</i>
Cocklebur	<i>Xanthium spp</i>
Crabgrass	<i>Digitaria spp</i>
Crown vetch	<i>Coronilla varia</i>
Curly dock*	<i>Rumex crispus</i>
Dandelion, common*	<i>Taraxacum officinale</i>
Dandelion, false* (spotted catsear)	<i>Hypochaeris radicata</i>
Dogbane*	<i>Apocynum cannabinum</i>
Fiddleneck, tarweed	<i>Amsinckia lycopsoides</i>
Filaree	<i>Erodium spp</i>
Fleabane, flax-leaved	<i>Conyza bonariensis</i>
Goatsbeard vine (sweet briar)	<i>Aruncus sylvester</i>
Goldenrod	<i>Solidago spp</i>
Horseweed/marestail	<i>Conyza canadensis</i>
Lespedeza	<i>Lespedeza cuneata</i>
Milkweed, common*	<i>Asclepias syriacea</i>
Mustard, wild	<i>Sinapis arvensis</i>
Nutsedge*	<i>Cyperus spp</i>
Oats, wild*	<i>Avena fatua</i>
Orchardgrass *	<i>Dactylis glomerata</i>
Orchardgrass (seedling)	<i>Dactylis glomerata</i>
Oxalis	<i>Oxalis spp</i>
Paragrass	<i>Panicum purpurascens</i>
Parsnip, wild	<i>Pastinaca sativa</i>
Pigweed	<i>Amaranthus spp</i>
Purslane, common	<i>Portulaca oleracea</i>
Quackgrass	<i>Agropyron repens</i>
Ryegrass, Italian (annual)	<i>Lolium multiflorum</i>
Smartweed	<i>Polygonum spp</i>
Spurge	<i>Euphorbia spp</i>
Star thistle	<i>Centaurea spp</i>
Trumpetcreeper*	<i>Campsis radicans</i>

## 8 - 10 2/3 Lb/Acre

Aster, heath	<i>Aster ericoides</i>
Bahiagrass*	<i>Paspalum notatum</i>
Bermudagrass*	<i>Cynodon dactylon</i>
Blackberry	<i>Rubus spp</i>
Bluegrass	<i>Poa spp</i>
Broomsedge	<i>Andropogon virginicus</i>
Camphorweed	<i>Heterotheca subaxillaris</i>
Canada thistle*	<i>Cirsium arvense</i>
Carrot, wild	<i>Daucus carota</i>
Chickweed	<i>Stellaria media</i>
Clovers	<i>Trifolium spp</i>
Dewberry	<i>Rubus trivialis</i>
Dogfennel	<i>Eupatorium capillifolium</i>
Fescue*	<i>Festuca spp</i>
Fingergrass	<i>Digitaria ciliaris</i>
Foxtail	<i>Setaria spp</i>
Guineagrass	<i>Panicum maximum</i>
Honeysuckle	<i>Lonicera spp</i>
Horseweed/marestail	<i>Conyza canadensis</i>
Lantana	<i>Lantana camara</i>
Lettuce, prickly	<i>Lactuca serriola</i>
Natalgrass (red top)	<i>Rhynchelytrum repens</i>
Plantain	<i>Plantago spp</i>
Ragweed, common	<i>Ambrosia elatior</i>
Smutgrass**	<i>Sporobolus indicus</i>
Spanishneedles	<i>Bidens bipinnata</i>
Vaseygrass	<i>Paspalum urvillei</i>

\* Suppression – a visible reduction in plant population and/or plant vigor as compared to an untreated area and generally not accepted as control.

\*\* Suppression may result with some of the giant (larger) smutgrass species.

## SPECIFIC WEED PROBLEMS

### Control of Canada Thistle in Crown Vetch - DuPont™

VELPAR® DF is recommended for control of Canada thistle in established stands of crown vetch on noncrop sites. Make a single application of 1 - 1 2/3 lb of VELPAR® DF from late spring through mid-summer, when thistle is actively growing prior to flowering. Do not use a surfactant. Some discoloration of the crown vetch foliage may occur after application.

## SPRAY EQUIPMENT

Apply VELPAR® DF uniformly over the desired area using ground equipment or helicopter. Do not apply more than 8 lbs per acre by air.

Use enough water for thorough coverage. For ground application this is usually a minimum of 25 gallons per acre. Higher application volumes may be needed to obtain uniform application with handgun equipment. For aerial applications (helicopter only) this is usually a minimum of 5 gallons per acre. Higher volumes of water may be needed when water temperatures are cold or the higher rates of VELPAR DF are used.

## INDUSTRIAL TURF (UNIMPROVED ONLY)

VELPAR® DF is recommended for selective weed control in established stands of bermudagrass and/or bahiagrass in noncrop areas.

## APPLICATION TIMING

Make a single application of VELPAR® DF per year when weeds are actively growing.

## WEEDS CONTROLLED - USE RATE

VELPAR® DF effectively controls the following weeds at the rates shown in industrial turf (unimproved only). Use a lower rate on coarse-textured soils (sand to sandy loam). Use the higher rate on fine-textured soils (clay loam to clay) and on soils high in organic matter.

### 9/10 - 1 1/2 Lb/Acre

Barley, little	<i>Hordeum pusillum</i>
Barnyardgrass	<i>Echinochloa crus-galli</i>
Dogfennel	<i>Eupatorium capillifolium</i>
Fescue	<i>Festuca spp</i>
Lespedeza	<i>Lespedeza cuneata</i>
Oxalis	<i>Oxalis spp</i>
Passionflower, maypop	<i>Passiflora incarnate</i>
Pepperweed, Virginia	<i>Lepidium virginicum</i>
Pigweed	<i>Amaranthus spp</i>
Smutgrass*	<i>Sporobolus indicus</i>

\* Suppression may result with some of the giant (larger) smutgrass species.

Suppression – a visible reduction in plant population and/or plant vigor as compared to an untreated area and generally not accepted as control.

## SPRAY EQUIPMENT

Apply VELPAR® DF uniformly over the desired area using ground equipment only.

For ground application, use enough water for thorough coverage usually a minimum of 25 gallons per acre. The use of a surfactant is not recommended.

## USE PRECAUTIONS

### INDUSTRIAL UNIMPROVED TURF

- Use VELPAR® DF only in stands of bermudagrass and bahiagrass established for at least one year. Do not treat newly sprigged or sodded areas.
- Some discoloration of the bermudagrass or bahiagrass may occur after application.
- Injury may result when desirable grasses are under stress from drought, insects, disease, cold temperature, or poor fertility.
- Severe turf injury may occur if applications are made on gravelly or rocky soils, thinly covered subsoils, or soils with less than 1% organic matter.

## NON-CROP

### BRUSH CONTROL

VELPAR® DF is recommended for the control of undesirable brush in non-crop sites.

## APPLICATION INFORMATION

Apply VELPAR® DF from late winter through summer, prebud break until new growth hardens off.

In areas where the soil remains frozen during the winter and spring rains are usually inadequate for soil activation, a fall or winter treatment may be applied before the soil freezes.

## BROADCAST

Apply 5 1/3 to 10 2/3 lb of VELPAR® DF per acre as a coarse spray by ground equipment or 5 1/3 to 8 lb per acre by air (helicopter only). Use enough water for thorough coverage. For ground equipment, usually a minimum of 25 gallons per acre. For aerial equipment, usually a minimum of 10 gallons per acre. Higher volumes of water may be needed when water temperatures are cold or the higher rates of VELPAR® DF are used.

## BASAL (SOIL)

### SINGLE STEM TREATMENT

Mix 2 2/3 pounds of VELPAR® DF with sufficient water to make one gallon of suspension and thoroughly agitate. Apply the VELPAR® DF suspension with an exact-delivery handgun applicator. This equipment delivers a thin stream of predetermined volume when triggered. Apply the VELPAR® DF suspension at the rate of 2 to 4 ml for each inch of stem diameter at breast height.

Direct the treatment to the soil within 3 feet of the root collar of woody plants to be controlled.

For multi-stemmed and low-growing brush that have stem diameters that are difficult to determine, apply the VELPAR® DF suspension at the rate of 2 to 4 ml per 3 feet of canopy width. For tall, slender (columnar) brush types, apply 4 to 8 ml per 3 feet of height. Base the rate on whichever canopy dimension is greater (width or height).

When treating brush that requires more than a single delivery of the DuPont™ VELPAR® DF suspension, apply subsequent deliveries equally spaced around the target plant. If treating brush on sloping sites, apply most of the suspension on the uphill side of the stem. If treating resprouts from brush disturbed by cutting or other mechanical methods, the rate of application should be proportional to the original tree size, not just the size of sprout regrowth.

**LACING/STREAKING** - Mix VELPAR® DF with water to form a concentrated suspension. Apply 5 1/3 to 10 2/3 lbs of VELPAR® DF per acre. Adjust the application equipment to deliver a narrow or straight stream spray pattern such that the swath width on the soil surface is 6 to 12 inches wide. Direct the spray at the base of the brush. Swaths or treated bands should be 2 to 4 feet apart. Apply the lower volumes for coarse textured soils or soils with low organic matter and the higher volumes for fine textured soils or soils with high organic matter.

## USE RATES

VELPAR® DF is recommended for the control or suppression of the following species in non-crop sites. Use lower rate on coarse-textured soils (sand to sandy loam). Use the higher rate on fine-textured soils (clay loam to clay) and on soils high in organic matter.

### 5 1/3 to 10 2/3 Lb/Acre

Alder	<i>Alnus spp</i>
Ash	<i>Fraxinus spp</i>
Aspen	<i>Populus spp</i>
Birch	<i>Betula spp</i>
Blackgum	<i>Nyssa sylvatica</i>
Bay, sweet	<i>Magnolia virginiana</i>
Catclaw acacia	<i>Acacia greggii</i>
Cedar, Eastern red	<i>Juniperus virginiana</i>
Cherry, black	<i>Prunus serotina</i>
Chinaberry*	<i>Melia azedarach</i>
Deerbrush	<i>Ceanothus integerrimus</i>
Dogwood, flowering*	<i>Cornus florida</i>
Elm, American	<i>Ulmus Americana</i>
Elm, Chinese	<i>Ulmus parvifolia</i>
Hackberry, common	<i>Celtis occidentalis</i>
Hawthorn	<i>Crataegus spp</i>
Hazel	<i>Corylus spp</i>
Hickory	<i>Carya spp</i>
Huisache	<i>Acacia farnesiana</i>
Juniper	<i>Juniperus spp</i>
Locust	<i>Robinia spp</i>
Lotebush	<i>Ziziphus obtusifolia</i>
Manzanita, Greenleaf	<i>Arctostaphylos patula</i>
Maple, red	<i>Acer rubrum</i>
Mesquite	<i>Prosopis glandulosa</i>
Mulberry	<i>Morus spp</i>
Oaks	<i>Quercus spp</i>
Osage-orange	<i>Maclura pomifera</i>
Persimmon	<i>Diospyros spp</i>
Plum, wild	<i>Prunus munsoniana</i>
Poplar, balsam	<i>Populus balsamifera</i>
Poplar, yellow	<i>Liriodendron tulipifera</i>
Privet	<i>Ligustrum spp</i>
Rose, multiflora	<i>Rosa multiflora</i>
Sassafras*	<i>Sassafras albidum</i>
Soapweed, small (yucca)	<i>Yucca glauca</i>
Snowbrush (varnishleaf)	<i>Ceanothus velutinus</i>
Sourwood	<i>Oxydendrum arboretum</i>
Sumac	<i>Rhus spp</i>
Sweetgum	<i>Liquidambar spp</i>
Tallow, Chinese	<i>Sapium sebiferum</i>
Waxmyrtle	<i>Myrica cerifera</i>
Whitebrush	<i>Aloysia gratissima</i>
Willow	<i>Salix spp</i>

\*Suppression – a visible reduction in plant population and/or plant vigor as compared to an untreated area and generally not accepted as control.

## USE PRECAUTIONS NON-CROP

- Injury to or loss of desirable trees or other plants may result if VELPAR® DF is applied or if equipment is drained or flushed on or near desirable trees or other plants, on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots.
- Application spray drift may injure desirable plants.
- Poor weed and brush control may result from the following:
  - Use on poorly drained sites
  - Applications made when the soil is saturated with water and rain is imminent within 24 hours.
  - Applications to soils high in organic matter (greater than 5%).
- Following mechanical cutting or clearing, allow stumps and injured trees sufficient time to adequately resprout before applying VELPAR® DF.
- Do not use VELPAR® DF on frozen soils.
- Do not use VELPAR® DF on lawns, driveways, tennis courts, or other residential or recreational areas.
- Weed and brush control results from spring applications depend on sufficient moisture to activate VELPAR® DF.
- Do not cut treated vegetation for forage or hay nor graze domestic animals on treated areas for 60 days following application. For rates above 8 lb per acre, do not cut treated vegetation for forage or hay nor graze domestic animals for 1 year.

## ADDITIONAL USE INFORMATION

### SPRAY DRIFT MANAGEMENT

The interaction of many equipment- and weather-related factors determines the potential for spray drift. The applicator is responsible for considering all these factors when making application decisions. Avoiding spray drift is the responsibility of the applicator.

### IMPORTANCE OF DROPLET SIZE

The most effective way to reduce drift potential is to apply large droplets (greater than 150–200 microns). The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. The presence of sensitive species nearby, the environmental conditions, and pest pressure may affect how an applicator balances drift control and coverage. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly or under unfavorable environmental conditions! See the Wind, Temperature and Humidity, and Temperature Inversions sections below.

## CONTROLLING DROPLET SIZE

### - GENERAL TECHNIQUES

- 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 a higher-capacity nozzle instead of increasing pressure.
- 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.

### CONTROLLING DROPLET SIZE - AIRCRAFT

- Number of Nozzles - Use the minimum number of nozzles with the highest flow rate that provide uniform coverage.
- Nozzle Orientation - Orienting nozzles so that the spray is emitted backwards, parallel to the airstream will produce larger droplets than other orientations.
- Nozzle Type - Solid stream nozzles (such as disc and core with swirl plate removed) oriented straight back produce larger droplets than other nozzle types.

### BOOM LENGTH AND HEIGHT

- **Boom Length (aircraft)** - The boom length should not exceed 3/4 of the wing length, using shorter booms decreases drift potential. For helicopters use a boom length and position that prevents droplets from entering the rotor vortices.
- **Boom Height (aircraft)** - Application more than 10 feet above the canopy increases the potential for spray drift.
- **Boom Height (ground)** Setting the boom at the lowest labeled height (if specified) which provides uniform coverage reduces the exposure of droplets to evaporation and wind. The boom should remain level with the crop and have minimal bounce.

### WIND

Drift potential increases at wind speeds of less than 3 mph (due to variable direction and inversion potential) or more than 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given wind speed. AVOID GUSTY OR WINDLESS CONDITIONS.

**Note:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they effect spray drift.

### TEMPERATURE AND HUMIDITY

When making applications in hot and dry conditions, set up equipment to produce larger droplets to reduce effects of evaporation.

## SURFACE TEMPERATURE INVERSIONS

Drift potential is high during a surface temperature inversion. Surface inversions restrict vertical air mixing, which causes small suspended droplets to remain close to the ground and move laterally in a concentrated cloud. Surface inversions are characterized by increasing temperature 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 concentrated cloud (under low wind conditions) indicates a surface inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

### SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce the effects of wind. However, it is the responsibility of the applicator to verify that the shields are preventing drift, and not interfering with uniform deposition of the product.

### SPRAY TANK CLEAN OUT

Thoroughly clean all traces of DuPont™ VELPAR® DF from application equipment immediately after use. Flush the tank, pump, hoses, and boom with several changes of water after removing nozzle tips and screens (clean these parts separately). Dispose of the equipment wash water by applying it to a use-site listed on this label.

## STORAGE AND DISPOSAL

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

**Pesticide Storage:** Store product in original container only. Store in a cool, dry place.

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

**Container Disposal: For Plastic Containers:** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. **For Fiber Sacks:** Completely empty fiber sack by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into manufacturing or application equipment. Then dispose of sack in a sanitary landfill or by incineration if allowed by State and local authorities. **For Fiber Drums With Liners:** Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Then dispose of liner in a sanitary landfill or by incineration if allowed by State and local authorities. If drum is contaminated and cannot be reused, dispose of in the same manner. **For Paper and Plastic Bags:** 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.

**Container Refilling and Disposal (For Containers up to 250 gal):** This is a refillable container. If the container is to be refilled, do not rinse with any material or introduce any pesticide other than DuPont™ VELPAR® DF. Reseal and return the container to any authorized DuPont refilling facility. If the container is not to be refilled, triple rinse (or equivalent) and offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or by open burning, if allowed by state and local authorities. If burned, keep out of smoke.

For minor spills, leaks, etc., follow all precautions indicated on this label and clean up immediately. Take special care to avoid contamination of equipment and facilities during cleanup procedures and disposal of wastes. In the event of a major spill, fire or other emergency, call 1-800-441-3637 day or night.

**Container Disposal for Bulk Containers:** When this container is empty, replace the cap and seal all openings that have been opened during use, and return the container to the point of purchase or to a designated location named at time of purchase of this product. The container must only be refilled with this pesticide product. **DO NOT REUSE THE CONTAINER FOR ANY OTHER PURPOSE.** Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn-out threads and closure devices. Check for leaks after refilling and before transporting. Do not transport if this container is damaged or leaking. If the container is damaged, leaking or obsolete, contact DuPont at 1-800-441-3637. If not returned to the point of purchase or to a designated location, triple rinse emptied container and offer for recycling. Disposal of this container must be in compliance with state and local regulations.

For minor spills, leaks, etc., follow all precautions indicated on this label and clean up immediately. Take special care to avoid contamination of equipment and facilities during cleanup procedures and disposal of wastes. In the event of a major spill, fire or other emergency, call 1-800-441-3637 day or night.

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## **LIMITATION OF WARRANTY AND LIABILITY**

NOTICE: Read This Limitation Of Warranty And Liability Before Buying Or Using This Product. If The Terms Are Not Acceptable, Return The Product At Once, Unopened, And The Purchase Price Will Be Refunded.

It is impossible to eliminate all risks associated with the use of this product. Such risks arise from weather conditions, soil factors, off target movement, unconventional farming techniques, presence of other materials, the manner of use or application, or other unknown factors, all of which are beyond the control of DuPont. These risks can cause: ineffectiveness of the product, crop injury, or injury to non-target crops or plants. DuPont does not agree to be an insurer of these risks. **WHEN YOU BUY OR USE THIS PRODUCT, YOU AGREE TO ACCEPT THESE RISKS.**

DuPont warrants that this product conforms to the chemical description on the label thereof and is reasonably fit for the purpose stated in the Directions for Use, subject to the inherent risks described above, when used in accordance with the Directions for Use under normal conditions.

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**For product information call: 1-888-6-DUPONT**

**Internet address: <http://cropprotection.dupont.com/>**

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