UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

December 21, 2015

Ms. Annette M. Bloomberg
Regulatory Manager
Bayer CropScience
P.O. Box 12014
2 T.W. Alexander Drive
Research Triangle Park, NC 27709

Subject: Notification per PRN 98-10 – Label changes associated with transfer or registration
Product Name: Velpar DF VU Herbicide
EPA Registration Number: 432-1576
Application Date: 12/03/2015
Decision Number: 511971

Dear Ms. Bloomberg:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 for the above referenced product. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action requested falls within the scope of PRN 98-10.

The label submitted with the application has been stamped "Notification" and will be placed in our records.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

If you have any questions, you may contact Lisa Pahel at (703) 347-0459 or via email at pahel.lisa@epa.gov.

Sincerely,

Heather Garvie, Product Manager 24
Fungicide and Herbicide
Registration Division (7505P)
Office of Pesticide Programs

GROUP	5	HERBICIDE

VELPAR® DF VU

HERBICIDE

Dispersible Granules

Active Ingredient	By Weight
Hexazinone	
[3-cyclohexyl-6-(dimethylamino) -1-methyl-1,3,5-triazine-2,4(1H,3H)-dione]	75%
Other Ingredients	25%
Total	**100%**

EPA Reg. No. ~~352-910~~ 432-1576
EPA Est. No.
Nonrefillable Container
Net:
OR
Refillable Container
Net:

NOTIFICATION

432-1576

The applicant has certified that no changes, other than those reported to the Agency have been made to the labeling. The Agency acknowledges this notification by letter dated:

12/21/2015

~~E. I. duPont de Nemours and Company~~
~~1007 Market Street~~
~~Wilmington, DE 19898~~

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 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 1-800-334-7577 ~~1-800-441-3637~~ for medical emergencies involving this product.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER

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 (PPE)

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 exist, 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. Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product and as soon as possible wash thoroughly and put on clean clothing.

ENVIRONMENTAL HAZARDS

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

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.

DIRECTIONS FOR USE

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

VELPAR® DF VU HERBICIDE must be used only in accordance with instructions on this label or in supplemental ~~DuPont~~ BAYER CROPSCIENCE 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 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.

PRODUCT INFORMATION

VELPAR® DF VU HERBICIDE is a water-dispersible granule that is mixed in water and applied as a spray for weed control in 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 VU HERBICIDE 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 VU HERBICIDE is noncorrosive to equipment.

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

This product may be applied on agricultural and non-agricultural 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 VU HERBICIDE is absorbed through the roots and foliage. Moisture is required to activate VELPAR® DF VU HERBICIDE 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 VU HERBICIDE 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 VU HERBICIDE 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 VU HERBICIDE 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 VU HERBICIDE.

TANK MIXTURES

VELPAR® DF VU HERBICIDE may be tank mixed with other herbicides and /or adjuvants registered for the uses specified in the label.

Refer to the label of the tank mix partner(s) for any additional use instructions or restrictions. The most restrictive label provisions apply. If other label instructions conflict with this label do not tank mix the herbicide and/or adjuvant with VELPAR® DF VU HERBICIDE.

INVASIVE SPECIES MANAGEMENT

This product may be considered for use on public, private, and tribal lands to treat certain weed species infestations that have been determined to be invasive, consistent with the Federal Interagency Committee for the Management of Noxious and Exotic Weeds (FICMNEW) National Early Detection and Rapid Response (EDRR) System for invasive plants. Effective EDRR systems address invasions by eradicating the invader where possible, and controlling them when the invasive species is too established to be feasibly eradicated. Once an EDRR assessment has been completed and action is advised, a Rapid Response needs to be taken to quickly contain, deny reproduction, and if possible eliminate the invader. Consult your appropriate state extension service, forest service, or regional multidisciplinary invasive species management coordination team to determine the appropriate Rapid Response provisions and allowed treatments in your area.

RESISTANCE

VELPAR® DF VU HERBICIDE, which contains the active ingredient hexazinone, is a Group 5 herbicide based on the mode of action classification system of the Weed Science Society of America.

When herbicides with mode of action classifications that affect the same biological sites of action are used repeatedly over several years to control the same weed species in the same treatment area, naturally-occurring resistant biotypes may survive a correctly applied herbicide treatment, propagate, and become dominant in that area. 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 biological 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 instructions 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.

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 48 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

CHRISTMAS TREES

VELPAR® DF VU HERBICIDE is labeled for control of certain weeds where the following species are grown:

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

Unless otherwise directed in separately published ~~DuPont~~ BAYER CROPSCIENCE LP instructions, do not use VELPAR® DF VU HERBICIDE on Christmas trees in the following states:

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

APPLICATION INFORMATION

EASTERN US

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

WESTERN US

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

Areas of less than 20 inches annual rainfall - VELPAR® DF VU HERBICIDE may be applied in the fall before the soil freezes or in the spring after snow cover melts, but before conifer budbreak 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 VU HERBICIDE per year.

Soils	VELPAR® DF VU HERBICIDE (Lb/Acre) First Year Plantings	Established Trees
Coarse Texture		
Loamy sand, sandy loam (50-85% sand)	1 1/3	1 1/3 - 1 2/3
Medium Texture		
Loam, silt loam, silt, clay loam, sandy clay loam	1 1/3 - 1 2/3	1 2/3 - 2 1/3
Fine Texture		
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 VU HERBICIDE 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 VU HERBICIDE is labeled for the control or suppression of the following weed species in Christmas tree crops:

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

* 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 VU HERBICIDE 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 FOR CHRISTMAS TREES

- Weed control results from spring applications depend on sufficient moisture to activate VELPAR® DF VU HERBICIDE.
- 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 VELPAR® DF VU HERBICIDE 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 budbreak.
  - -Gravelly or rocky soils, exposed subsoils, clay knobs, sand, or sandy soil with 85% or more sand.

USE RESTRICTIONS FOR CHRISTMAS TREES

- Do not use VELPAR® DF VU HERBICIDE in nurseries, seed beds, or ornamental plantings.
- Do not add a surfactant in applications over the top of conifers.
- Livestock may be grazed immediately following a broadcast application of VELPAR® DF VU HERBICIDE at rates of 1.5 pounds per acre or less, and treated vegetation may be cut, dried, and fed after 38 days.
- Do not cut treated vegetation for feed, or graze livestock on treated areas for 60 days following application of VELPAR® DF VU HERBICIDE at broadcast rates exceeding 1.5 pounds per acre.

FORESTRY

SITE PREPARATION

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

EASTERN US AND LAKE STATES

Fir, balsam	*Abies balsamea*
Pine, Austrian	*Pinus negra*
Pine, loblolly	*Pinus taeda*
Pine, longleaf	*Pinus palustris*
Pine, ponderosa	*Pinus ponderosa*
Pine, red	*Pinus resinosa*
Pine, Scotch	*Pinus sylvestris*
Pine, shortleaf	*Pinus echinata*
Pine, slash	*Pinus elliottii*
Pine, Virginia	*Pinus virginiana*
Spruce, black	*Picea mariana*
Spruce, red	*Picea rubens*
Spruce, white	*Picea glauca*

WESTERN US

Fir, Douglas	*Pseudotsuga menziesii*
Fir, grand	*Abies grandis*
Fir, Noble	*Abies procera*
Fir, white	*Abies concolor*
Pine, Jeffrey	*Pinus jeffreyi*
Pine, lodgepole	*Pinus contorta*
Pine, ponderosa	*Pinus ponderosa*
Spruce, blue	*Picea pungens*
Spruce, Engleman	*Picea englemannii*
Spruce, Sitka	*Picea sitchensis*

APPLICATION INFORMATION

EASTERN US

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

	VELPAR® DF VU (Lb/Acre)
Soils	Eastern US
Coarse Texture	
Sand, loamy sand, sandy loam	2 2/3-4
Medium Texture	
Loam, silt loam, sandy clay loam	4 - 5 1/3
Fine Texture	
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 VU HERBICIDE 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 VU HERBICIDE may be applied if the user has prior experience with VELPAR® DF VU HERBICIDE on the other conifer species. With

no prior experience, it is advised that either a small area of plantings be tested for conifer safety prior to treating larger areas, or make no application of VELPAR® DF VU HERBICIDE in these areas within the site preparation area. Conifer species that are sensitive to VELPAR® (hexazinone) DF VU HERBICIDE, 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 VU HERBICIDE.

PLANTS CONTROLLED

VELPAR® DF VU HERBICIDE is labeled for the control or suppression of the following species in site preparations for forestry crops:

HERBACEOUS PLANTS

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

** For western US site preparation, apply at 4 pounds per acre.

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

* 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 VU HERBICIDE 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 VU HERBICIDE. 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 VU HERBICIDE 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 VU HERBICIDE with sufficient water to make one gallon of suspension and thoroughly agitate. Intermittent agitation may be required to maintain the VELPAR® DF VU HERBICIDE in suspension.

Apply the VELPAR® DF VU HERBICIDE 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 VU HERBICIDE must be applied during the period from hardwood budbreak 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 VU HERBICIDE Suspension

	ML/Spot	Grid (Ft)	Lb/Acre
Coarse	0.6	3X3	2
	2.0	4X4	4
	3.1	4X6	4
Medium/Fine	1.6	3X3	5.3
	2.8	4X4	5.3
	3.5	4X4	6.6
	5.2	4X6	6.6

BASAL (SOIL) SINGLE STEM TREATMENTS

Mix 2 2/3 pounds of VELPAR® DF VU HERBICIDE with sufficient water to make one gallon of suspension and thoroughly agitate. Apply the VELPAR® DF VU HERBICIDE suspension with an exact-delivery handgun applicator. This equipment delivers a thin stream of predetermined volume when triggered. Apply the VELPAR® DF VU HERBICIDE 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 VU HERBICIDE 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 VU HERBICIDE 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 must be proportional to the original tree size, not just the size of sprout regrowth.

USE PRECAUTIONS FOR 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 VU HERBICIDE.
- Following harvest, allow sufficient time for stumps and injured trees to adequately resprout before applying VELPAR® DF VU HERBICIDE.

FORESTRY- RELEASE

VELPAR® DF VU HERBICIDE is labeled for conifer release where the following species are grown:

EASTERN US AND LAKE STATES

Fir, balsam	*Abies balsamea*
Pine, loblolly	*Pinus taeda*
Pine, longleaf	*Pinus palustris*
Pine, red	*Pinus resinosa*
Pine, shortleaf	*Pinus echinata*
Pine, slash	*Pinus elliotti*
Pine, Virginia	*Pinus virginiana*
Spruce, black	*Picea mariana*
Spruce, Norway	*Picea abies*
Spruce, red	*Picea rubens*
Spruce, white	*Picea glauca*

WESTERN US

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

APPLICATION INFORMATION

EASTERN US

Apply VELPAR® DF VU HERBICIDE 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. Dormant trees are less susceptible to injury. Applications where the spray comes into direct contact with conifers after dormancy break in the spring or before the final resting bud has hardened in the fall may severely injure or kill the trees.

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 VU HERBICIDE.

USE RATES

The rates listed below are for broadcast application. Do not use more than one application of VELPAR® DF VU HERBICIDE 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

Crop Species	Soil Description	VELPAR® DF VU HERBICIDE (Lb/Acre) Established Trees
Loblolly pine Longleaf pine	Loamy sand, sandy loam	1 1/3 - 2
Shortleaf pine Virginia pine	Loam, silt loam, 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	11/3- 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 VU HERBICIDE in the following western conifers: Blue spruce, Douglas fir, Engleman spruce, Grand fir, Jeffrey pine, Lodgepole pine, Noble fir, Ponderosa pine, Sitka spruce, Western hemlock, and White fir.

VELPAR® DF VU HERBICIDE Soil Description	(Lb/Acre)
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 VU HERBICIDE only if rainfall has settled the soil around the base and root systems of the transplants.

BRUSH CONTROLLED

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

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

* 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 the 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 VU HERBICIDE 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 VU HERBICIDE with sufficient water to make one gallon of suspension and thoroughly agitate. Intermittent agitation may be required to maintain the VELPAR® DF VU HERBICIDE in suspension.

Apply the VELPAR® DF VU HERBICIDE 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 VU HERBICIDE must be applied during the period from hardwood budbreak 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 VU HERBICIDE Suspension

	ML/Spot	Grid (Ft)	Lb/Acre
Coarse	0.5	3X4	1.3*
	1.2	3X6	2
	2.1	4X6	2.6
Medium/Fine	1.2	3X3	4
	2.3	3X6	4
	1.6	3X3	5.3
	3.1	3X6	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 VU HERBICIDE with sufficient water to make one gallon of suspension and thoroughly agitate. Apply the VELPAR® DF VU HERBICIDE suspension with an exact-delivery handgun applicator. This equipment delivers a thin stream of predetermined volume when triggered. Apply the VELPAR® DF VU HERBICIDE 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 VU HERBICIDE 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 VU HERBICIDE 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 must be proportional to the original tree size, not just the size of sprout regrowth.

USE PRECAUTIONS FOR RELEASE FOR GRID & SINGLE STEM

- Application of VELPAR® DF VU HERBICIDE basal soil spot treatments 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 VU HERBICIDE 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 VU HERBICIDE is labeled for controlling herbaceous weeds where these pine species are grown:

EASTERN US

Loblolly pine
Longleaf pine
Slash pine
Red pine

WESTERN US

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

APPLICATION INFORMATION

EASTERN US

Apply VELPAR® DF VU HERBICIDE as a broadcast or banded spray in the spring prior to conifer budbreak 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 budbreak, 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 VU HERBICIDE.

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

	VELPAR® DF VU HERBICIDE (Lb/Acre)	
Soil Description	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 labeled rates in the FORESTRY RELEASE -Use Rates Eastern US section of the label.

WESTERN US

Refer to labeled rates in the FORESTRY RELEASE- Use Rates Western US section of the label.

WEEDS CONTROLLED

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

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

* 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

VELPAR® DF VU HERBICIDE is labeled 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 VU HERBICIDE is labeled 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 VU HERBICIDE to be applied per acre. Apply this amount of VELPAR® DF VU HERBICIDE 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 VU HERBICIDE, mix the amount as prescribed above in a sufficient quantity of water to uniformly coat the desired amount of fertilizer. Suspensions of VELPAR® DF VU HERBICIDE 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 FOR FORESTRY- IMPREGNATED FERTILIZER

- 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.

USE RESTRICTIONS FOR FORESTRY- IMPREGNATED FERTILIZER

- Do not impregnate potassium nitrate, sodium nitrate, or triple super phosphate fertilizers with VELPAR® DF VU as herbicidal action will be lost.

USE PRECAUTIONS FOR FORESTRY

- On tracts of land where various soil types are present and VELPAR® DF VU HERBICIDE 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 VU HERBICIDE.
- Where burning is desired, burn vegetation after any brush has completely defoliated, at least twice, allowing for sufficient root uptake of VELPAR® DF VU HERBICIDE.
- Weed control results from spring applications depend on sufficient moisture to activate VELPAR® DF VU HERBICIDE.
- When applying VELPAR® DF VU HERBICIDE 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 VU HERBICIDE 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 budbreak
  - -On gravelly or rocky soils, exposed subsoils, clay knobs, sand, or sandy soil with 85% or more sand.

USE RESTRICTIONS FOR FORESTRY

- Do not use VELPAR® DF VU HERBICIDE in nurseries, seedbeds, or ornamental plantings.
- Do not use VELPAR® DF VU HERBICIDE on frozen soils; use in spring after snow melt.
- Do not add a surfactant in applications over the top of conifers.
- Livestock may be grazed immediately following a broadcast application of VELPAR® DF VU HERBICIDE at rates of 1.5 pounds per acre or less, and treated vegetation may be cut, dried, and fed after 38 days.
- Do not cut treated vegetation for feed or graze livestock on treated areas for 60 days following application of VELPAR® DF VU HERBICIDE at broadcast rates exceeding 1.5 pounds per acre.

YELLOW POPLAR PLANTINGS

VELPAR® DF VU HERBICIDE is labeled 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 (budbreak). 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 VU HERBICIDE 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 VU HERBICIDE.

USE PRECAUTIONS FOR YELLOW POPLAR PLANTINGS

- Applications of VELPAR® DF VU HEBICIDE and tank mixes of VELPAR® DF VU HERBICIDE and ~~DuPont™~~ ESCORT® XP HERBICIDE 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 VU HERBICIDE and tank mixes of VELPAR® DF VU HERBICIDE and ESCORT® XP must 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 VU HERBICIDE is not advised 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 VU HERBICIDE is labeled for control of brush and weeds in pasture.

BERMUDAGRASS/BAHIAGRASS

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

APPLICATION INFORMATION

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

WEEDS CONTROLLED -USE RATES

VELPAR® DF VU HERBICIDE 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 (0.9) – 1 ½ (1.5) Lb/Acre

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

* 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 VU HERBICIDE 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 may increase the potential for bermudagrass or bahiagrass injury.

USE PRECAUTIONS FOR BERMUDAGRASS/BAHIAGRASS

- For bermudagrass that may be grown in the states of ID, OR,UT or WA, determine the suitability of using VELPAR® DF VU HERBICIDE by treating a small area at a labeled application rate prior to treating larger areas. The smaller treated area must be observed for any signs of herbicidal injury during 60 days of normal growing conditions to determine if the treatment is safe to bermudagrass. If this evaluation is not completed prior to use, the user assumes the responsibility for any plant damage or other liability resulting from the use of VELPAR® DF VU HERBICIDE on bermudagrass.
- 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 VU HERBICIDE 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.

USE RESTRICTIONS FOR BERMUDAGRASS/BAHIAGRASS

- Use VELPAR® DF VU HERBICIDE only in stands of bermudagrass and bahiagrass established for at least one year. Do not treat newly sprigged or sodded areas.
- Livestock may be grazed immediately following a broadcast application of VELPAR® DF VU HERBICIDE at rates of 1.5 pounds per acre or less, and treated vegetation may be cut, dried, and fed after 38 days.

PASTURE/RANGELAND BRUSH CONTROL

VELPAR® DF VU HERBICIDE may be used either broadcast or as a basal-soil treatment for the control of undesirable brush in pasture or rangeland.

APPLICATION INFORMATION

Apply VELPAR® DF VU HERBICIDE 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 broadcast rates needed to control the species below, see the **Forestry - Release, Use Rates** section.

BRUSH CONTROLLED

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

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

*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 VU HERBICIDE with sufficient water to make one gallon of suspension and thoroughly agitate. Apply the VELPAR® DF VU HERBICIDE suspension with an exact-delivery handgun applicator. This equipment delivers a thin stream of predetermined volume when triggered. Apply the VELPAR® DF VU HERBICIDE 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 VU HERBICIDE 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 VU HERBICIDE suspension per acre per year. Intermittent agitation may be required to maintain the VELPAR® DF VU HERBICIDE in suspension.

USE PRECAUTIONS FOR PASTURE/RANGELAND

- Injury to or loss of desirable trees or other plants may result if VELPAR® DF VU HERBICIDE 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 VU HERBICIDE.
- Leave treated soil undisturbed to reduce the potential for VELPAR® DF VU HERBICIDE movement by soil erosion due to wind or water.
- Weed and brush control results depend on sufficient moisture to activate VELPAR® DF VU HERBICIDE.

USE RESTRICTIONS FOR PASTURE/RANGELAND

- Do not use VELPAR® DF VU HERBICIDE on frozen soils.
- When VELPAR® DF VU HERBICIDE 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.
- Livestock may be grazed immediately following a broadcast application of VELPAR® DF VU HERBICIDE at rates of 1.5 pounds per acre or less, and treated vegetation may be cut, dried, and fed after 38 days.
- Do not cut treated vegetation for feed, or graze livestock on treated areas for 60 days following application of VELPAR® DF VU HERBICIDE at broadcast rates exceeding 1.5 pounds per acre.

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.

Use on non-crop sites including industrial turf grasses are not within the scope of the Worker Protection Standard. When applied as a spray do not enter or allow worker entry into treated areas until sprays have dried.

APPLICATION INFORMATION

VELPAR® DF VU HERBICIDE is labeled 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).

NON-CROP SITES

VELPAR® DF VU HERBICIDE is labeled for control of many annual, biennial, and perennial weeds in non-crop sites.

APPLICATION INFORMATION

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

WEEDS CONTROLLED - USE RATE

VELPAR® DF VU HERBICIDE effectively controls the following weeds when applied at the use rates shown in industrial sites. When applied at lower rates, VELPAR® DF VU HERBICIDE 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	*Echinochloa crus- galli*
Bindweed, field*	*Convolvulus arvensis*
Bouncingbet*	*Saponaria officinalis*
Bromegrass	*Bromus spp*
Buffalograss*	~~*Buchloe dactyloides*~~ *Bouteloua dactyloides*
Burdock	*Arctium spp*
Cocklebur	*Xanthium spp*
Crabgrass	*Digitaria spp*
Crown vetch	~~*Coronilla varia*~~ *Securigera varia*
Curly dock*	*Rumex crispus*
Dandelion, common*	*Taraxacum officinale*
Dandelion, false (spotted catsear)*	*Hypochaeris radicata*
Dogbane*	*Apocynum cannabinum*
Fiddleneck, tarweed	*Amsinckia lycopsoides*
Filaree	*Erodium spp*
Fleabane, flax-leaved	*Conyza bonariensis*
Goatsbeard ~~vine (sweet briar)~~	~~*Aruncus sylvester*~~ *Aruncus dioicus*
Goldenrod	*Solidago spp*
Horseweed/marestail	*Conyza canadensis*
Lespedeza	*Lespedeza cuneata*
Milkweed, common*	~~*Asclepias syriacea*~~ *Asclepias syriaca*
Mustard, wild	*Sinapis arvensis*
Nutsedge*	*Cyperus spp*
Oats, wild*	~~*Avenafatua*~~ *Avena fatua*
Orchardgrass *	*Dactylis glomerata*
Orchardgrass (seedling)	*Dactylis glomerata*
Oxalis	*Oxalis spp*
Paragrass	~~*Panicum purpurascens*~~ *Urochloa mutica*
Parsnip, wild	*Pastinaca sativa*
Pigweed	*Amaranthus spp*
Purslane, common	*Portulaca oleracea*
Quackgrass	*Agropyron repens*
Ryegrass, Italian (annual)	*Lolium multiflorum*
Smartweed	*Polygonum spp*
Spurge	*Euphorbia spp*
Star thistle	*Centaurea spp*
Trumpetcreeper*	*Campsis radicans*

8- 10 2/3 Lb/Acre

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

* 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 - VELPAR® DF VU HERBICIDE is labeled for control of Canada thistle in established stands of crown vetch on noncrop sites. Make a single application of 1- 1 2/3lb of VELPAR® DF VU HERBICIDE 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 VU HERBICIDE 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 VU HERBICIDE are used.

NON-CROP BRUSH CONTROL

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

APPLICATION INFORMATION

Apply VELPAR® DF VU HERBICIDE from late winter through summer, prebudbreak 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 VU HERBICIDE 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 VU HERBICIDE are used.

BASAL (SOIL) SINGLE STEM TREATMENT

Mix 2 2/3 pounds of VELPAR® DF VU HERBICIDE with sufficient water to make one gallon of suspension and thoroughly agitate. Apply the VELPAR® DF VU HERBICIDE suspension with an exact-delivery handgun applicator. This equipment delivers a thin stream of predetermined volume when triggered. Apply the VELPAR® DF VU HERBICIDE 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 VU HERBICIDE 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 VELPAR® DF VU HERBICIDE 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 must be proportional to the original tree size, not just the size of sprout regrowth.

LACING/STREAKING- Mix VELPAR® DF VU HERBICIDE with water to form a concentrated suspension. Apply 5 1/3 to 10 2/3 lbs of VELPAR® DF VU HERBICIDE 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 must 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 VU HERBICIDE is labeled 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	*Alnus spp*
Ash	*Fraxinus spp*
Aspen	*Populus spp*
Birch	*Betula spp*
Blackgum	*Nyssa sylvatica*
Bay, sweet	*Magnolia virginiana*
Catclaw acacia	~~*Acacia greggii*~~ *Senegalia greggii*
Cedar, Eastern red	*Juniperus virginiana*
Cherry, black	*Prunus serotina*
Chinaberry*	*Melia azedarach*
Deerbrush	*Ceanothus integerrimus*
Dogwood, flowering*	*Cornus florida*
Elm, American	*Ulmus Americana*
Elm, Chinese	*Ulmus parvifolia*
Hackberry, common	*Celtis occidentalis*
Hawthorn	*Crataegus spp*
Hazel	*Corylus spp*
Hickory	*Carya spp*
Huisache	*Acacia farnesiana*
Juniper	*Juniperus spp*
Locust	*Robinia spp*
Lotebush	*Ziziphus obtusifolia*
Manzanita, Greenleaf	*Arctostaphylos patula*
Maple, red	*Acer rubrum*
Mesquite	*Prosopis glandulosa*
Mulberry	*Morus spp*
Oaks	*Quercus spp*
Osage-orange	*Maclura pomifera*
Persimmon	*Diospyros spp*
Plum, wild	~~*Prunus munsoniana*~~ *Prunus americana*
Poplar, balsam	*Populus balsamifera*
Poplar, yellow	*Liriodendron tulipifera*
~~Privet~~ Privit	*Ligustrum spp*
Rose, multiflora	*Rosa multiflora*
Sassafras*	*Sassafras albidum*
Soapweed, small (yucca)	*Yucca glauca*
Snowbrush ~~(varnishleaf)~~	*Ceanothus velutinus*
Sourwood	~~*Oxydendrum arboretum*~~ *Oxydendrum arboreum*
Sumac	*Rhus spp*
Sweetgum	*Liquidambar spp*
Tallow, Chinese	*Sapium sebiferum*
Waxmyrtle	*Myrica cerifera*
Whitebrush	*Aloysia gratissima*
Willow	*Salix spp*

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

INDUSTRIAL TURFGRASS

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

APPLICATION TIMING

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

WEEDS CONTROLLED - USE RATE

VELPAR® DF VU HERBICIDE 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 (0.9) -1 ½ (1.5) Lb/Acre	
Barley, little	*Hordeum pusillum*
Barnyardgrass	*Echinochloa crus-galli*
Dogfennel	*Eupatorium capillifolium*
Fescue	*Festuca spp*
Lespedeza	*Lespedeza cuneata*
Oxalis	*Oxalis spp*
Passionflower, maypop	*Passiflora ~~incarnate~~ incarnata*
Pepperweed, Virginia	*Lepidium virginicum*
Pigweed	*Amaranthus spp*
Smutgrass*	*Sporobolus indicus*

*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 VU HERBICIDE 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 advised.

USE PRECAUTIONS FOR ALL NON-CROP SITES

- For bermudagrass that may be grown in the states of ID, OR, UT or WA, determine the suitability of using VELPAR® DF VU HERBICIDE by treating a small area at a labeled application rate prior to treating larger areas. The smaller treated area must be observed for any signs of herbicidal injury during 60 days of normal growing conditions to determine if the treatment is safe to bermudagrass. If this evaluation is not completed prior to use, the user assumes the responsibility for any plant damage or other liability resulting from the use of VELPAR® DF VU HERBICIDE on bermudagrass.
- Injury to or loss of desirable trees or other plants may result if VELPAR® DF VU HERBICIDE 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 VU HERBICIDE.
- Leave treated soil undisturbed to reduce the potential for VELPAR® DF VU HERBICIDE movement by soil erosion due to wind or water.
- Some discoloration of the bermudagrass or bahiagrass turfgrasses may occur after application.
- Injury may result when desirable turfgrasses are under stress from drought, insects, disease, cold temperature, or poor fertility.
- Severe turfgrass injury may occur if applications are made on gravelly or rocky soils, thinly covered subsoils, or soils with less than 1% organic matter.
- For VELPAR® DF VU HERBICIDE rates above 8 pounds per acre, do not cut treated vegetation for forage or hay nor graze domestic animals for 1 year following application.

USE RESTRICTIONS FOR ALL NON-CROP SITES

- Do not use VELPAR® DF VU HERBICIDE on frozen soils.
- Do not use VELPAR® DF VU HERBICIDE 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 VU HERBICIDE.
- Livestock may be grazed immediately following a broadcast application of VELPAR® DF VU HERBICIDE at rates of 1.5 pounds per acre or less, and treated vegetation may be cut, dried, and fed after 38 days.
- Do not cut treated vegetation for feed, or graze livestock on treated areas for 60 days following application of VELPAR® DF VU HERBICIDE at broadcast rates greater than 1.5 pounds and up to 8 pounds per acre.
- There are no grazing or haying restrictions for the directed basal-soil applications of VELPAR® DF VU HERBICIDE.
- Use VELPAR® DF VU HERBICIDE only in stands of bermudagrass and bahiagrass turfgrasses established for at least one year. Do not treat newly sprigged or sodded areas.

ADDITIONAL INSTRUCTIONS, PRECAUTIONS, AND RESTRICTIONS FOR AGRICULTURAL AND NON-AGRICULTURAL USES

SPRAY TANK CLEAN OUT

Thoroughly clean all traces of VELPAR® DF VU HERBICIDE 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.

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 drift management strategy is to apply the largest droplets which are consistent with pest control objectives. 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.

A droplet size classification system describes the range of droplet sizes produced by spray nozzles. The American Society of Agricultural and Biological Engineers (ASABE) provide a Standard that describes droplet size spectrum categories defined by a number of reference nozzles (fine, coarse, etc.). Droplet spectra resulting from the use of a specific nozzle may also be described in terms of volume mean diameter (VMD). Coarser droplet size spectra have larger VMD's and lower drift potential.

CONTROLLING DROPLET SIZE- GROUND APPLICATION

- **Nozzle Type**- Select a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. The use of low-drift nozzles will reduce drift potential.
- **Pressure**- The lowest spray pressures recommended for the nozzle produce the largest droplets. Higher pressure reduces droplet size and does not improve canopy penetration. When higher flow rates are needed, using a higher-capacity nozzle instead of increasing pressure results in the coarsest droplet spectrum.
- **Flow Rate/Orifice Size**- Using the highest flow rate nozzles (largest orifice) that are consistent with pest control objectives reduces the potential for spray drift. Nozzles with higher rated flows produce coarser droplet spectra.

CONTROLLING DROPLET SIZE- AIRCRAFT

- **Nozzle Type**- Solid stream, or other low drift nozzles produce the coarsest droplet spectra.
- **Number of Nozzles**- Using the minimum number of nozzles with the highest flow rate that provide uniform coverage will produce a coarser droplet spectrum.
- **Nozzle Orientation**- Orienting nozzles in a manner that minimizes the effects of air shear will produce the coarsest droplet spectra. For some nozzles such as solid stream, pointing the nozzles straight back parallel to the airstream will produce a coarser droplet spectrum than other orientations.
- **Pressure** - Selecting the pressure that produces the coarsest droplet spectrum for a particular nozzle and airspeed reduces spray drift potential. For some nozzle types such as solid streams, lower pressures can produce finer droplet spectra and increase drift potential.

BOOM LENGTH (AIRCRAFT), AND APPLICATION HEIGHT

- **Boom Length (aircraft)** -Using shorter booms decreases drift potential. Boom lengths are expressed as a percentage of an aircraft's wingspan or a helicopter's rotor blade diameter. Shorter boom length and proper positioning can minimize drift caused by wingtip or rotor vortices.
- **Application Height (aircraft)** - Applications made at the lowest height that are consistent with pest control objectives and the safe operation of the aircraft will reduce the potential for spray drift.
- **Application Height (ground)** - Applications made at the lowest height consistent with pest control objectives, and that allow the applicator to keep the boom level with the application site and minimize bounce, will reduce the exposure of spray droplets to evaporation and wind, and reduce spray drift potential.

WIND

Drift potential is lowest when applications are made in light to gentle sustained winds (2-10 mph), which are blowing in a constant direction. Many factors, including droplet size and equipment type also determine drift potential at any given wind speed. AVOID GUSTY OR WINDLESS CONDITIONS.

Local terrain can also influence wind patterns. Every applicator is expected to be familiar with local wind patterns and how they affect spray drift.

TEMPERATURE AND HUMIDITY

Setting up equipment to produce larger droplets to compensate for droplet evaporation can reduce spray drift potential. Droplet evaporation is most severe when conditions are both hot and dry.

SURFACE TEMPERATURE INVERSIONS

Drift potential is high during a surface temperature inversion. Surface inversions restrict vertical air mixing, which may cause 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. Mist or fog may indicate the presence of an inversion in humid areas. Inversions may also be identified by producing smoke and observing its behavior. Smoke that remains close to the ground, or moves laterally in a concentrated cloud under low wind conditions indicates a surface inversion. 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 minimizing drift potential and not interfering with uniform deposition of the product.

AIR ASSISTED (AIR BLAST) FIELD CROP SPRAYERS

Air assisted field crop sprayers carry droplets to the target via a downward directed air stream. Some may reduce the potential for drift, but if a sprayer is unsuitable for the application and/or set up improperly, high drift potential can result. It is the responsibility of the applicator to determine that a sprayer is suitable for the intended application, that it is configured properly, and that drift potential has been minimized.

Note: Air assisted field sprayers can affect product performance by affecting spray coverage and canopy penetration. Read the specific crop use and application equipment instructions to determine if an air assisted field crop sprayer can be used.

SENSITIVE AREAS

Making applications when there is a sustained wind moving away from adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is an effective way to minimize the effect of spray drift.

DRIFT CONTROL ADDITIVES

Using product compatible drift control additives can reduce drift potential. When a drift control additive is used, read and carefully observe cautionary statements and all other information on the additive's label. If using an additive that increases viscosity, ensure that the nozzles and other application equipment will function properly with a viscous spray solution. Preferred drift control additives have been certified by the Chemical Producers and Distributors Association (CPDA).

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage and 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 HANDLING: Refer to the Net Contents section of this product's labeling for the applicable "Nonrefillable Container" or "Refillable Container" designation.

Nonrefillable Plastic and Metal Containers (Capacity Equal to or Less Than 50 Pounds): Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then, (a) for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning; if burned, stay out of smoke, or (b) for Metal Containers, offer for recycling if available or reconditioning if appropriate or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

Nonrefillable Plastic and Metal Containers (Capacity Greater Than 50 Pounds): Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then, (a) for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning; if burned, stay out of smoke, or (b) for Metal Containers, offer for recycling if available or reconditioning if appropriate or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

Nonrefillable Plastic and Metal Containers, e.g., Intermediate Bulk Containers [IBC] (Size or Shape Too Large to be Tipped, Rolled or Turned Upside Down): Nonrefillable container. Do not reuse or refill this container. Pressure rinse as follows: Empty the remaining product contents into application equipment or a mix tank. Insert pressure rinsing nozzle in the container, and rinse at about 40 PSI for at least 30 seconds. Drain rinsate for 10 seconds after the flow begins to drip. Pour or pump rinsate into application equipment or rinsate collection system. Then, (a) for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning; if burned, stay out of smoke, or (b) for Metal Containers, offer for recycling if available or reconditioning if appropriate or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

Nonrefillable Paper or Plastic Bags, Fiber Sacks including Flexible Intermediate Bulk Containers (FIBC) or Fiber Drums With Liners: Nonrefillable container. Do not reuse or refill this container. Completely empty paper or plastic bag, fiber sack or drum liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application or manufacturing equipment. Then offer for recycling if available or dispose of empty paper or plastic bag, fiber sack or fiber drum and liner in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Refillable Fiber Drums With Liners: Refillable container (fiber drum only).Refilling Fiber Drum: Refill this fiber drum with VELPAR® DF VU HERBICIDE containing hexazinone only. Do not reuse this fiber drum for any other purpose. Cleaning before refilling is the responsibility of the refiller. Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application or manufacturing equipment. **Disposing of Fiber Drum and/or Liner**: Do not reuse this fiber drum for any other purpose other than refilling (see preceding). Cleaning the container (liner and/or fiber drum) before final disposal is the responsibility of the person disposing of the container. Offer the liner for recycling if available or dispose of liner in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke. If drum is contaminated and cannot be reused, dispose of it in the manner required for its liner. To clean the fiber drum before final disposal, completely empty the fiber drum by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application or manufacturing equipment. Then offer the fiber drum for recycling if available or dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

All Other Refillable Containers: Refillable container. Refilling Container: Refill this container with VELPAR® DF VU HERBICIDE containing hexazinone only. Do not reuse this container for any other purpose. Cleaning before refilling is the responsibility of the refiller. 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. **Disposing of Container**: Do not reuse this container for any other purpose other than refilling (see preceding). Cleaning the container before final disposal is the responsibility of the person disposing of the container. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then, (a) for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning; if burned, stay out of smoke, or (b) for Metal Containers, offer for recycling if available or reconditioning if appropriate or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

Outer Pouches of Water Soluble Packets (WSP): Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available or, dispose of the empty outer foil pouch in the trash as long as WSP is unbroken. If the outer pouch contacts the formulated product in any way, the pouch must be triple rinsed with clean water. Add the rinsate to the spray tank and dispose of the outer pouch as described previously.

Do not transport if this container is damaged or leaking. If the container is damaged, leaking or obsolete, or in the event of a major spill, fire, or other emergency, contact ~~DuPont~~ BAYER CROPSCIENCE at 1-800-334-7577 ~~1-800-441-3637~~, day or night.

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~~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.~~

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