



DuPont™ Velpar® ULW

herbicide



STATE OF HAWAII
Department of Agriculture

ACCEPTED

LICENSE NO. **9200.178**

RESTRICTED-USE PESTICIDE

®

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

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Soluble Granules

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

EPA Reg. No. 352-450

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. Wash thoroughly with soap and water after handling.

PERSONAL PROTECTIVE EQUIPMENT

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

Applicators and other handlers must wear:

Long-sleeved shirt and long pants.

Chemical resistant gloves made of any water proof material.

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® ULW herbicide is a special granular product that is used to control undesirable woody and herbaceous plants in reforestation and noncrop sites.

VELPAR® ULW may be applied using appropriately modified ground or aerial equipment (where permitted). All application equipment should be adjusted to ensure that product distribution across the treated area is uniform. Thoroughly clean all application equipment immediately with water after use.

VELPAR® ULW is noncorrosive to equipment.

ENVIRONMENTAL CONDITIONS AND BIOLOGICAL ACTIVITY

Rainfall dissolves the VELPAR® ULW granules, releasing the active ingredient (hexazinone) into the root zone, where it is absorbed during periods of vigorous plant growth. On herbaceous plants, symptoms usually appear within 3 to 4 weeks after activation by moisture. Activity may be reduced when vegetation is dormant, semidormant, or under stress. On woody plants, symptoms usually appear within 4 to 8 weeks after activation by moisture. Defoliation and subsequent refoliation may occur, but susceptible plants are killed. Results may develop slowly, and maximum effects may not be achieved until 12 to 24 months after activation.

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

- use rate
- soil texture
- pest spectrum and size at application
- environmental conditions at and following treatment

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.

VELPAR® ULW should be used only in accordance with recommendations on this label or in separate published DuPont recommendations available through local suppliers.

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. We encourage you to consult with your state Department of Agriculture, Extension Service, or other pesticide lead agency for information regarding soil permeability, aquifer vulnerability, and best management practices for your area.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL 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 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 water proof material
- Shoes plus socks
- Protective eyewear

FORESTRY

CONIFER RELEASE (U.S.)

DuPont™ VELPAR® ULW is recommended for the suppression of woody plants and the control of herbaceous plants following conifer establishment. See table below for use rates.

USE RATES

Soil Texture Description	DuPont™ VELPAR® ULW (Pound per acre)
Sand, Loamy Sand, Sandy Loam	1 to 2
Loam, Sandy Clay Loam, Silt Loam	2 to 3
Clay Loam, Sandy Clay, Silty Clay Loam, Silty Clay, Clay	3 to 4

EASTERN U.S.

SITE PREPARATION

VELPAR® ULW is recommended for the control of undesirable woody and herbaceous plants in forest site preparation.

VELPAR® ULW may be applied where the following conifer species will be grown:

Loblolly pine	<i>Pinus taeda</i>
Longleaf pine	<i>Pinus palustris</i>
Shortleaf pine	<i>Pinus echinata</i>
Slash pine	<i>Pinus elliottii</i>
Virginia pine	<i>Pinus virginiana</i>

APPLICATION INFORMATION

Apply VELPAR® ULW at 2.5 to 6.33 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 those weeds identified in the WEEDS CONTROLLED section of this label as "partial control or suppression" predominate.

APPLICATION TIMING

For best results, apply in the spring after the danger of a killing frost has passed. Weeds and brush should be actively growing at application. Weed and brush control is dependent on sufficient rainfall following treatment to activate VELPAR® ULW.

WESTERN U.S. (CA, ID, MT, OR, WA)

SITE PREPARATION

VELPAR® ULW may be applied in the above states where the following conifer species are grown:

Douglas fir	<i>Pseudotsuga menziesii</i>
Englemann spruce	<i>Picea englemannii</i>
Grand fir	<i>Abies grandis</i>
Lodgepole pine	<i>Pinus contorta</i>
Ponderosa pine	<i>Pinus ponderosa</i>

APPLICATION INFORMATION

Apply VELPAR® ULW at rates of 4 to 5.33 pounds per acre. Use the lower rate range on coarse textured soils, soils low in organic matter or where target vegetation is considered easy to control. Use a higher rate range on fine textured soils, soils high in organic matter or where vegetation is considered hard to kill.

In areas where other conifer species may be mixed in with the conifers listed above, VELPAR® ULW may be applied if the user has prior experience with VELPAR® ULW 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® ULW in these areas within the site preparation area. Conifer species, such as, sugar pine and western larch that are sensitive to VELPAR® (hexazinone) ULW, require 18 months before inter-planting on treated sites is successful.

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 granule distribution across the treatment swath and environmental stress.

APPLICATION TIMING

Best control of weed and brush plants is dependent on sufficient precipitation following the application of DuPont™ VELPAR® ULW. For best results west of the Cascades, and other areas of high spring rainfall, apply VELPAR® ULW in the spring when weeds and brush are actively growing. In areas east of the Cascades, and other areas of low spring rainfall, apply VELPAR® ULW in the fall before the soil freezes or in the spring in anticipation of rainfall. Spring applications should be made after the snow cover melts.

WILDLIFE OPENINGS – LOGGING ROADS

VELPAR® ULW is also recommended for the control of undesirable woody and herbaceous plants in establishing wildlife openings and maintaining logging roads. Apply VELPAR® ULW at rates of 2 to 5.33 pounds per acre.

WEEDS CONTROLLED FORESTRY

HERBACEOUS PLANTS

Aster, showy	<i>Aster spectabilis</i>
Aster, white heath*	<i>Aster pilosus</i>
Barnyardgrass	<i>Echinochloa crus-galli</i>
Bentgrass	<i>Agrostis spp.</i>
Bristlegrass, African	<i>Setaria sphacelata</i>
Bromegrass, ripgut	<i>Bromus rigidus</i>
Carrot, wild	<i>Daucus carota</i>
Catsear, smooth	<i>Hypochaeris glabra</i>
Daisy, oxeye	<i>Leucanthemum vulgare</i>
Dandelion, common*	<i>Taraxacum officinale</i>
Dock, curly	<i>Rumex crispus</i>
Fescue*	<i>Festuca spp.</i>
Fireweed*	<i>Chamerion angustifolium</i>
Fleabane, hairy	<i>Conyza bonariensis</i>
Foxtail	<i>Setaria spp.</i>
Goldenrod, Canada	<i>Solidago canadensis</i>
Groundsel, common	<i>Senecio vulgaris</i>
Horseweed*	<i>Conyza canadensis</i>
Manzanita (bearberry)	<i>Arctostaphylos uva-ursi</i>
Mullein, common	<i>Verbascum thapsus</i>
Orchardgrass	<i>Dactylis glomerata</i>
Ragweed, common	<i>Ambrosia elatior</i>
Ryegrass, Italian	<i>Lolium multiflorum</i>
Smartweed	<i>Polygonum spp.</i>
Snowberry, creeping	<i>Gaultheria humifusa</i>
Squawcarpet	<i>Ceanothus prostratus</i>
Thistle, Canada	<i>Cirsium arvense</i>
Velvetgrass	<i>Holcus lanatus</i>
Wheatgrass, bluebunch	<i>Pseudoroegneria spicata</i>

WOODY PLANTS

Ash, green*	<i>Fraxinus pennsylvanica</i>
Ash, white*	<i>Fraxinus americana</i>
Elder, American	<i>Sambucus canadensis</i>
Birch	<i>Betula spp.</i>
Blackgum*	<i>Nyssa sylvatica</i>
Brambles(such as)	<i>Rubus spp.</i>
Blackberry	
Dewberry	
Raspberry	
Cedar, Eastern red*	<i>Juniperus virginiana</i>
Cherry, black*	<i>Prunus serotina</i>
Cherry, choke*	<i>Prunus virginiana</i>
Dogwood* (flowering)	<i>Cornus florida</i>
Elm	<i>Ulmus spp.</i>
Hawthorn	<i>Crataegus spp.</i>
Hickory*	<i>Carya spp.</i>
Honeysuckle	<i>Lonicera spp.</i>
Hornbeam, American	<i>Carpinus caroliniana</i>
Maple, red*	<i>Acer rubrum</i>
Mulberry	<i>Morus spp.</i>
Oaks (such as)	
Post oak	<i>Quercus stellata</i>
Southern red oak	<i>Quercus falcata</i>
Turkey oak	<i>Quercus laevis</i>
Water oak	<i>Quercus nigra</i>
White oak	<i>Quercus alba</i>
Olive, Russian	<i>Elaeagnus angustifolia</i>
Plum, wild	<i>Prunus spp.</i>
Rose, multiflora	<i>Rosa multiflora</i>
Sumac*	<i>Rhus spp.</i>
Sweetgum	<i>Liquidambar styraciflua</i>
Willow	<i>Salix spp.</i>
Yaupon*	<i>Ilex vomitoria</i>

* Partial Control or Suppression - Specie suppression or partial control 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.

USE PRECAUTIONS

FORESTRY

- Do not cut for forage or hay nor graze domestic animals on treated areas for 60 days following application.
- On tracts of land where various soil types are present and VELPAR® ULW rate selection is difficult, conifer damage or less-than-expected vegetation suppression may occur due to the rate differences required for various soil types.
- Injury to or loss of desirable trees or other plants may result if VELPAR® ULW
 - granules drift onto desirable plants,
 - is applied on or near desirable trees or other plants, or areas where the roots may extend,
 - if equipment washwater is drained or flushed on or near desirable trees or other plants, on areas where their roots may extend, or
 - is applied in locations where the chemical may be washed or moved into contact with roots of desirable trees or other plants.
- Following harvest, stumps and injured trees should be allowed sufficient time to adequately resprout before VELPAR® ULW application.

- Where burning is desired in site preparation applications, burn only after the residual stand is completely defoliated (at least twice), allowing for sufficient root uptake of DuPont™ VELPAR® ULW.
- Do not apply to frozen soil.
- Poor weed and brush control may result from the following:
 - use on poorly drained sites
 - applications made when the soil is saturated with water
 - applications to soils high in organic matter (greater than 5%)
 - spring applications that do not receive adequate rainfall for activation
 - uneven distribution of product across the treatment swath
- Excessive conifer injury may occur when VELPAR® ULW is applied for release in the following situations:
 - on trees that show poor vigor, or damage by insects, disease, winter injury drought, 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
 - on conifers growing on gravelly or rocky soils, exposed subsoils or clay knobs, or sand or sandy soil with 85% or more sand
 - on conifer species not listed on this label
 - on southern pines outplanted less than 4 years on coarse-textured soils or less than 3 years on fine-textured soils
 - in an uneven distribution pattern of product across the treatment swath

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.

Noncrop, Industrial Brush Control, as described on this label, is not within the scope of the Worker Protection Standard.

NON-CROP SITES

VELPAR® ULW is recommended for the control of undesirable herbaceous and woody plants in non-crop sites.

APPLICATION INFORMATION

VELPAR® ULW is recommended for brush species, listed as herbaceous and woody plants on this label, on the following uncultivated agricultural areas (nonfood producing): farmyards, fuel storage areas, fence rows, rights-of-way, fallow land, barrier strips; and on uncultivated nonagricultural areas (outdoors): airports, highway rights-of-way, railroad rights-of-way, utility rights-of-way, and sewage disposal areas; industrial sites: lumberyards, tank farms, etc.

VELPAR® ULW may be applied by either ground or aerial application equipment when used on military installations. All other uses should be applied as a broadcast treatment by ground application equipment only.

APPLICATION TIMING

Apply VELPAR® ULW from late winter through summer, from pre-budbreak through periods of active growth, when adequate rainfall can be expected for activation. 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.

APPLICATION EQUIPMENT

VELPAR® ULW should be applied using appropriately modified ground equipment only. A Solo® backpack equipped with a granular applicator that has been modified to handle prescribed use rates is recommended.

All application equipment should be adjusted to ensure that distribution across the treatment swath is uniform.

Thoroughly clean all traces of VELPAR® ULW herbicide from application equipment immediately after use. Wash equipment thoroughly with water.

USE RATES

VELPAR® ULW use rates for herbaceous and woody plants are shown in the **Plants Controlled—Non-Crop** sections below. Use the lower rates on coarse-textured soils and soils low in organic matter; use the higher rates on fine-textured soils and on soils high in organic matter.

**PLANTS CONTROLLED
NON-CROP SITES**

DuPont™ VELPAR® ULW controls the following herbaceous and woody plants when applied at the rates shown:

HERBACEOUS PLANTS

2 1/3 to 8 Pounds per Acre

Barnyardgrass	<i>Echinochola crus-galli</i>
Bromegrass	<i>Bromus sp.</i>
Burdock	<i>Arctium lappa</i>
Cocklebur	<i>Xanthium sp.</i>
Crabgrass	<i>Digitaria sp.</i>
Crownvetch	<i>Securigera varia</i>
Fiddleneck	<i>Amsinckia intermedia</i>
Filaree	<i>Erodium cicutarium</i>
Fleabane	<i>Conyza bonariensis</i>
Goatsbeard vine	<i>Aruncus dioicus</i>
Goldenrod, Canada	<i>Solidago Canadensis</i>
Lespedeza	<i>Lespedeza sp.</i>
Mustard, wild	<i>Sinapis arvensis</i>
Paragrass	<i>Urochloa mutica</i>
Pigweed	<i>Amaranthus sp.</i>
Purslane, common	<i>Portulaca oleracea</i>
Quackgrass	<i>Agropyron repens</i>
Ryegrass, Italian	<i>Lolium multiflorum</i>
Smartweed	<i>Polygonum sp.</i>
Spurge	<i>Euphorbia sp.</i>
Parsnip, wild	<i>Pastinaca sativa</i>
Star thistle, wild	<i>Centaurea sp.</i>
Woodsorrel	<i>Oxalis sp.</i>

WOODY PLANTS

3 2/3 to 5 1/3 Pounds per Acre

Pepper, Brazilian	<i>Schinus terebinthifolius</i>
Yaupon*	<i>Ilex vomitoria</i>

5 1/3 to 10 2/3 Pounds per Acre

Acacia, catclaw	<i>Acacia greggii</i>
Alder	<i>Alnus sp.</i>
Ash*	<i>Fraxinus sp.</i>
Aspen	<i>Populus sp.</i>
Bay, sweet	<i>Magnolia virginiana</i>
Blackgum*	<i>Nyssa sylvatica</i>
Birch	<i>Betula sp.</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	<i>Cornus sp.</i>
Elm, American	<i>Ulmus Americana</i>
Elm, Chinese	<i>Ulmus parvifolia</i>
Hackberry	<i>Celtis sp.</i>
Hawthorn	<i>Crataegus sp.</i>
Hazel	<i>Corylus sp.</i>
Hickory*	<i>Carya sp.</i>
Huisache	<i>Acacia farnesiana</i>
Juniper	<i>Juniperus sp.</i>
Lotebush	<i>Ziziphus obtusifolia</i>
Locust	<i>Robinia sp.</i>
Manzanita	<i>Arctostaphylos sp.</i>
Maple, red*	<i>Acer rubrum</i>
Mesquite	<i>Prosopis sp.</i>
Mulberry	<i>Morus sp.</i>
Myrtle	<i>Myrtus sp.</i>
Oaks	<i>Quercus sp.</i>
Orange, Osage	<i>Maclura pomifera</i>
Persimmon*	<i>Diospyros virginiana</i>
Plum, wild	<i>Prunus munsoniana</i>
Poplar, balsam	<i>Populus balsamifera</i>
Poplar, yellow	<i>Liriodendron tulipifera</i>
Privet*	<i>Ligustrum sp.</i>
Rose, multiflora	<i>Rosa multiflora</i>
Sassafras*	<i>Sassafras sassafras</i>
Snowbrush	<i>Ceanothus velutinus</i>
Soapweed, small	<i>Yucca glauca</i>
Sourwood*	<i>Oxydendrum arboretum</i>
Sumac	<i>Rhus sp.</i>
Sweetgum	<i>Liquidambar styraciflua</i>
Whitebrush	<i>Aloysia gratissima</i>
Willow	<i>Salix sp.</i>

*Difficult to control.

USE PRECAUTIONS NON-CROP

- Do not use on lawns, walks, driveways, tennis courts, or similar residential areas.
- Do not cut 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 for forage or hay nor graze domestic animals for 1 year.
- Injury to or loss of desirable trees or other plants may result if DuPont™ VELPAR® ULW
 - granules drift onto desirable plants,
 - is applied on or near desirable trees or other plants, or areas where the roots may extend,
 - if equipment washwater is drained or flushed on or near desirable trees or other plants, on areas where their roots may extend, or
 - is applied in locations where the chemical may be washed or moved into contact with roots of desirable trees or other plants.
- Following mechanical cutting or clearing, stumps and injured trees should be allowed sufficient time to adequately resprout before VELPAR® ULW application.
- Poor brush control may result from the following:
 - use on poorly drained or marshy sites
 - applications made when the soil is saturated with water
 - applications to soils high in organic matter (greater than 5%)
 - applications that do not receive adequate rainfall for activation
 - uneven distribution of product across the treatment swath
 - treatment of target plants that are under stress
- Do not use on frozen soils.
- Do not use on soil with 85% or more sand and less than 1% organic matter.

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 affect 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.

SENSITIVE AREAS

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

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 Disposal: 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.

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