351-603



# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION

John H. Cain E.I. du Pont de Nemours & Co. 1007 Market Street Wilmington, DE 19898

JUL 19 2013

Subject:

Notification; Per PR-Notice 98-10

DuPont Oustar Herbicide EPA Reg. No. 352-603

Date Submitted: July 19, 2013

Dear Mr. Cain:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 93-3 dated July 19, 2013 for the product referenced above. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 93-3 and finds that the action requested falls within the scope of PRN 93-3. The label submitted with the application has been stamped "Notification" and will be placed in our records.

If you have any questions regarding this letter, please contact Kable Bo Davis at (703) 306-0415 or <a href="mailto:davis.kable@epa.gov">davis.kable@epa.gov</a>.

Sincerely,

Kathryn Montague Product Manager 23

Herbicide Branch

Registration Division (7505P)

Please read instructions on	reverse before comple	ting form.		Form Approve	od. OMB No. 20	<u> </u>	Approval expires 05-31-98	
C EDA		United States			Registra	tion	OPP Identifier Number	
<b>\$EPA</b>	Environmenta Weshi	I Protection ngton, DC 2046		-	Amend	nent	·	
		- 7. ·			<b>○</b> Other			
		Application	for Pestici			1		
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4. Company/Product (Name DuPont /DuPont Ousta		·	<b>PM#</b> 25				None L Restricted	
5. Name and Address of Ap	plicant (Include ZIP Co	ode)	6. Exp	edited Revie	w. In accorda	nce with	FIFRA Section 3(c)(3)	
E. I. du Pont de Nemours 1007 Market Street	; & Co.		(b)(i), my product is similar or identical in composition and labeling to:					
Wilmington, DE 19898	Attention:	J. Cain		Reg. No.				
Check if thi	s is a new address		1	ct Name				
			Section -			·		
Amendment - Explai	n below.				bels in respons			
Resubmission in response to Agency letter dated				Agency letter dated "Me Too" Application. NOTIFICATION			TION	
Notification - Explain	) below.			Other - Explain	n below.	ow. JUL 1 9 2013		
Explanation: Use addition	onal page(s) if necessa	ry. (For section I	and Section II.)				· · · · · · · · · · · · · · · · · · ·	
Submission of labeling by No			•	ext ("or to area	s where surface	water is pre	esent") exactly as required	
per PR Notice 93-3. "This notification is consister	nt with the provisions of	PR Notice 93-3 a	nd EPA Regulatio	ns at 40 CFR 15	2.46, and no oth	er changes	have been made to the	
labeling or the confidential st EPA. I further understand the								
FIFRA and I may be subject						ns product	may be in violation of	
			Section - I	11			4 BCC (100 )	
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Yes	Yes	v .	Yes			Metal	in the second of	
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<b>★</b> Label	Container	Various: 1lb	- 500 lb		✓ On Labe  × On Labe		panying product	
6. Manner in Which Label is	Affixed to Product	Lithogra Paper gl Stencile	ph ued	X Other	Extended Cont	ent label (	ECL)	
		Stencile	section - I	V -		<del></del>		
1. Contact Point (Complete	e items directly below	for identification			necessary, to pi	ocess this	application.)	
Name			itle				No. (include Area Code)	
J. H. (Jack) Cain			Sr. Registration	on Mgr.			66-6417	
		Certificati	ion	•			6. Date Application	
	ements I have made or ny knowingly false or b law.						Received (Stamped)	
2. Signature	Digitally signed by John H C		. Title					
John H Cain  Jr  Jr  Jr  Jr  Jr  Jr  Jr  Jr  Jr  J			Sr. Registration Mgr.					
4. Typed Name			. Date					
J. H. Cain		J	uly 19, 2013					



# **DuPont™ Oustar®**

## HERBICIDE

# Dispersible Granules

Active Ingredient			By Weight
Hexazinone [3-cyclohexyl-6-(dimethylamino)-1-methyl-1,3,5		63.2%	
Sulfometuron methyl  [Methyl 2-[[[(4,6-dimethyl-2-pyrimidinyl)amino	o]-carbonyl]amino]sulfonyl]benzoate}		11.8%
Other Ingredients			25%
TOTAL			100%
EPA Reg. No. 352-603		EPA Est. No	
Nonrefillable Container Net:	NOTIFICATION		
OR Refillable Container Net:	JUL 1 9 2013		
E. I. duPont de Nemours and Company 1007 Market Street Wilmington, DE 19898			

# 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 (PPE)

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

# All mixers, loaders, 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.

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.

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

Engineering Control Statement: Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40CFR 170.240(d)(6)].

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

# **USER SAFETY RECOMMENDATIONS**

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

Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. If no such instructions for washables exist, use detergent and hot water.

#### **ENVIRONMENTAL HAZARDS**

For terrestrial uses, except for under the forest canopy, 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.

Exposure to DuPont<sup>TM</sup> OUSTAR® can injure or kill plants. Damage to susceptible plants can occur when soil particles are blown or washed off target onto cropland.

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.

OUSTAR® must be used only in accordance with instructions on this label or in separately published DuPont labeling.

DuPont will not be responsible for losses or damages resulting from the use of this product in any manner not specifically instructed by the label. User assumes all risks associated with such non-labeled use.

Do not apply more than 6.0 ounces (0.375 pounds active) active ingredient sulfometuron methyl per acre per year when using this product or any other product containing sulfometuron methyl.

Do not apply more than 3.18 ounces active ingredient (0.199 pounds) sulfometuron methyl per acre, per single application, when using this product with any other product containing sulfometuron methyl.

Do not apply more than 5 pounds of active ingredient hexazinone per acre per year when using this product or any other product containing hexazinone.

Do not use on food or feed crops.

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 in your State responsible for pesticide regulation.

# PRODUCT INFORMATION

OUSTAR® herbicide is dispersible granule that is mixed and applied as a spray or impregnated on dry, bulk fertilizer. The product is a combination of two herbicides (hexazinone and sulfometuron methyl). The two herbicides have different modes of action. OUSTAR® effectively controls or suppresses many annual grasses and broadleaf weeds. OUSTAR® may be used to control herbaceous weeds on forestry sites in the establishment of loblolly, slash and longleaf pines. The purpose of herbaceous weed control is to allow rapid root development by the pine seedlings to optimize water, light and available

nutrients. DuPont<sup>TM</sup> OUSTAR® may be applied in the first and subsequent growing seasons to provide adequate weed control to expedite the development of pine plantations and crown closure.

This product may be applied on forestry 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, season dry flood plains and transitional areas between upland and lowland sites when no water is present.

It is noncorrosive to equipment, nonflammable, nonvolatile, and does not freeze.

#### ENVIRONMENTAL CONDITIONS AND BIOLOGICAL ACTIVITY

When applied as a spray, OUSTAR® is absorbed by both the roots and foliage of plants, rapidly inhibiting the growth of susceptible plants. When applied on dry, bulk fertilizer, OUSTAR® is absorbed primarily by the roots. When applied as a spray, it may be applied before weed emergence or shortly thereafter. When applied on dry, bulk fertilizer it should be applied before weed emergence. The best results are obtained when the application is made during the early stages of weed growth before an established root system is developed.

When OUSTAR® is applied before or shortly after weed emergence, weed control can generally be expected to last from late Spring to mid-Summer. Significant weed invasion of treated sites may occur following this period of extended weed control. The degree and duration of weed control depends on:

- soil characteristics such as pH, moisture, organic matter and drainage
- · weed species present, size at application and infestation intensity
- environmental and weather conditions at and following treatment

Rainfall is needed to move OUSTAR® into the soil for absorption by the weeds. Warm, moist conditions following application accelerate the herbicidal activity; cold, dry conditions delay the activity. Weeds hardened-off by drought stress are less susceptible to OUSTAR®. Weed control may be lessened when rainfall is not sufficient for activation. The level of activity and duration of activity is influenced by soil characteristics. Soil texture and organic matter affect the activity of the hexazinone component. Use the higher recommended rates on soils that are high in organic matter or those that are fine textured (i.e. clay loam). Soil pH affects the activity of the sulfometuron methyl component. A soil pH greater than 6 may result in greater activity while a pH less than 5 may slightly reduce the activity of this component.

For best postemergence results, spray OUSTAR® on young, actively growing weeds.

Once absorbed by the foliage or roots, OUSTAR® controls susceptible weeds in two different ways. The sulfometuron methyl component acts to stop the production of amino acids needed for growth. The hexazinone component acts to inhibit photosynthesis needed for food production by the weeds.

# **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 recommended, 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**

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 such as using a 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 sites 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.

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#### 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 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**

## **Application Information**

DuPont<sup>TM</sup> OUSTAR® may be used to control or suppress many broadleaf weeds and grasses in forestry sites where shortleaf pine, loblolly pine, longleaf pine or slash pine are to be established. Apply sprays by ground equipment or by helicopter. Apply impregnated fertilizer by ground equipment or by air (helicopter or fixed-wing aircraft).

# **Application Timing**

Apply OUSTAR® sprays before herbaceous weeds emerge or shortly thereafter. Apply impregnated fertilizer before weeds emerge. Apply only during seasons when rainfall is sufficient to activate the herbicide in the soil.

#### Weeds Controlled

OUSTAR® effectively controls or suppresses the following weeds when applied at the use rates indicated within this label.

Chickweed Crabgrass Dogfennel Fescue Fireweed (willowweed) Goldenrod Horseweed Kentucky bluegrass Nutsedge (yellow)
Panicums (broadleaf,
fall, narrow)
Pokeweed
Ragweed
Shepherd's purse
White snakeroot
Yellow sweetclover

# **Application Rates**

Apply OUSTAR® at the rates indicated. Use the lower rates on coarse-textured soils and the higher rates on fine-textured soils. On sites of varying soil texture make rate selections based on the soil of the coarsest texture. For the establishment of shortleaf pines, OUSTAR® may only be used at a rate of 10 to 12 ounces per acre on coarse, medium or fine textured soils.

Soil Texture	1st year Weed Control ounces per acre	After 1st year Weed Control ounces per acre	
Coarse Textured Loamy sand Sandy Ioam Sand	10-12	12-16	- 11
Medium Textured Loam Sandy clay loam Silt loam	12-16	16-19	
Fine Textured Clay loam Sandy clay Silty clay loam Silty clay	16-19	18-24	
Clay	Not recommended	Not recommended	

# **SPRAY EQUIPMENT**

Low rates of DuPont<sup>TM</sup> OUSTAR® can kill or severely injure most crops. Following an OUSTAR® application, the use of spray equipment to apply other pesticides to crops on which OUSTAR® is not registered may result in their damage. The most effective way to reduce this crop damage potential is to use dedicated mixing and application equipment. Alternatively, carefully follow the Sprayer Clean Up section directions on this label.

# **BROADCAST APPLICATION**

#### Ground

Use 10 to 40 gallons of water per acre when applying OUSTAR® as a broadcast application. Select a spray volume and delivery system that will ensure thorough coverage and a uniform spray pattern. Be sure the sprayer is calibrated before use. Avoid overlapping and shut off spray booms while starting, turning, slowing, or stoping to avoid injury to desired species.

# Air (Helicopter Only)

Use 5 to 15 gallons of water per acre when applying OUSTAR®. Select a spray volume and delivery system that will ensure thorough coverage and a uniform spray pattern. Do not use fixed-wing aircraft. Be sure the sprayer is calibrated. Avoid overlapping and shut off spray booms while starting, turning or slowing to avoid injury to desired species.

# MIXING INSTRUCTIONS

- 1. Fill spray tank 1/2 full of water.
- 2. With the agitator running, add the proper amount of OUSTAR®.
- 3. Add the remaining water.
- 4. Agitate the spray tank thoroughly.

OUSTAR® may degrade in spray solutions when the pH is acidic and approaches 5 or less. Use the spray preparation within 24 hours to avoid product degradation. If the spray preparation is left standing, agitate it thoroughly before using.

# **FERTILIZER IMPREGNATION**

OUSTAR® herbicide is recommended to impregnate or coat dry bulk fertilizer to be applied on forested areas. Dry bulk fertilizer may be impregnated with OUSTAR® for application in the establishment and release of conifer species listed on this label (except longleaf pine).

# **IMPREGNATION**

To impregnate the fertilizer, use a system consisting of a conveyor or closed drum used to blend dry bulk fertilizer. Do not impregnate potassium nitrate, sodium nitrate or triple super phosphate fertilizers with OUSTAR® as herbicidal action will be lost. Diammonium phosphate, potassium chloride, 16-16-16 and 24-4-4 have been successfully used. Do not use OUSTAR® on limestone.

If fertilizer materials are excessively dusty, use a suitable additive to reduce dust prior to impregnation. Dusty fertilizer may result in poor distribution and excessive risk of drift during application. The dry fertilizer must be properly impregnated and uniformly applied to avoid potential tree injury/mortality and poor weed control.

Consult the Application Rates section of this label for the appropriate rate of OUSTAR® to be used per acre. Apply this amount of OUSTAR® to the volume of fertilizer to be applied per acre. To impregnate dry bulk fertilizer, mix the amount of OUSTAR® as prescribed above in a sufficient quantity of water to uniformly coat the desired amount of fertilizer. Suspensions of OUSTAR® will require thorough agitation. Direct the spray nozzles to deliver a fine spray of the mixture toward the

fertilizer for uniform coverage. The use of a colorant or dye may be beneficial to visually determine the uniformity of impregnation.

Impregnation of DuPont<sup>™</sup> OUSTAR® to dry bulk fertilizer may vary. If absorption of the impregnating spray by the fertilizer 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 impregnated fertilizer as soon as possible after impregnation for optimum performance. Impregnated fertilizer may become lumpy and difficult to apply following storage. Uniform and precise application of the fertilizer impregnated with OUSTAR® is essential for satisfactory weed control and to minimize tree injury.

Follow the instructions in the Sprayer Clean Up section of this label for cleaning equipment used to impregnate, transport, and apply the fertilizer.

Low rates of OUSTAR® can kill or severely injure most crops. Following an OUSTAR® application, the use of spray equipment to apply other pesticides to crops on which OUSTAR® is not registered may result in their damage. The most effective way to reduce this crop damage potential is to use dedicated mixing and application equipment.

#### **BROADCAST APPLICATION**

Applications may be made by ground or air (helicopter or fixed wing aircraft).

Accurate calibration of the application equipment is essential for uniform distribution on the soil surface. Overlaps or skips between adjoining swaths or non-uniform distribution of impregnated fertilizer within the swath will deliver poor results and may result in tree injury or mortality.

# SPRAYER CLEAN UP

Thoroughly clean all mixing and spray equipment following applications of OUSTAR® as follows:

- 1. Drain tank; thoroughly rinse spray tanks, boom, and hoses with clean water.
- 2. Fill the tank with clean water and add 1 gallon of household ammonia (contains 3% active) for every 100 gallons of water. Flush the hoses, boom, and nozzles with the cleaning solution. Then add more water to completely fill the tank. Circulate the cleaning solution through the tank and hoses for at least 15 minutes. Flush the hoses, boom, and nozzles again with the cleaning solution, and then drain the tank.
  - Equivalent amounts of an alternate-strength ammonia solution or a commercial cleaner can be used in the cleanout procedure. If a commercial cleaner is used, carefully read and follow the individual cleaner instructions.
- 3. Remove the nozzles and screens and clean separately in a bucket containing cleaning agent and water.
- 4. Repeat step 2.
- 5. Rinse the tank, boom, and hoses with clean water.
- 6. Dispose of the rinsate on a labeled site or at an approved waste disposal facility. If a commercial cleaner is used follow the directions for rinsate disposal on the label.

#### Notes

- 1. Attention: Do not use chlorine bleach with ammonia as dangerous gases will form. Do not clean equipment in an enclosed area.
- Steam-cleaning aerial spray tanks is recommended before performing the above cleanup procedure to facilitate the removal of any caked deposits.

# ADDITIONAL INSTRUCTIONS, PRECAUTIONS AND RESTRICTIONS

- Do not apply this product through any type of irrigation system.
- Do not use in nurseries, seed beds or ornamental plantings.
- Do not apply OUSTAR® to trees grown for Christmas trees or ornamentals.
- Use of OUSTAR® on tracts of land where various soil types occur can make rate selection difficult and also increases the risk of
  pine damage and/or reduced weed control due to the different rates required for the different soil types.
- Poor weed control may occur when applications are made to saturated soils and rainfall occurs within 24 hours, due to the potential for soil movement and/or heavy water runoff.
- Use of OUSTAR® under the following conditions increases the risk of pine injury:
  - On trees that are suffering from loss of vigor caused by insects, diseases, drought, winter damage, animal damage, excessive soil moisture, planting shock, previous agricultural practices or other stresses.
  - Where plantings are made on gravelly or rocky soils.
- Do not use a surfactant with OUSTAR® if applications are to be made over the top of pines. Allowing OUSTAR® plus surfactant spray to contact pine foliage increases the risk of injury or death of the trees. The user assumes all responsibility for pine injury if a surfactant is used with OUSTAR® applied after planting.
- When applying DuPont™ OUSTAR® after transplanting loblolly, slash, shortleaf or longleaf pines, wait until rainfall has settled the soil around the base and root systems of the pine seedlings before making the treatment.

- Do not drain or flush equipment on or near desirable trees or other plants, or on areas where their roots may extend, or in locations
  where the chemical may be washed or moved into contact with their roots. Doing so increases the risk of injury or death of
  desirable trees or other plants.
- OUSTAR® applications made where runoff water flows onto agricultural land increases the risk of crop injury. OUSTAR® applications made during periods of intense rainfall, to soils saturated with water, or soils through which rainfall will not readily penetrate increases the risk of runoff and movement.
- · Leave treated soil undisturbed to reduce the potential for OUSTAR® movement by soil erosion due to wind or water.
- Do not apply when the soil is frozen or covered with snow or standing water.
- Applications may not be made to sites that are subject to wind erosion when less than a 60% chance of rainfall is predicted to occur in the treatment area within 48 hours. Sites that are subject to wind erosion usually have a high silt and/or fine to very fine sand fractions. Sites with low organic matter also tend to be prone to wind erosion.

# 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 TECHNIQUES

- 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 ADDITIVIES

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).

## UPWIND SWATH DISPLACEMENT

When applications are made with a crosswind the swath will be displaced downwind. An adjustment for swath displacement is made on the downwind edge of the application site by shifting the path of the application equipment upwind.

## SPRAY DRIFT RESTRICTIONS

Where states have more stringent regulations they must be observed.

# **AERIAL APPLICATIONS**

- Applicators are required to use upwind swath displacement, and displacement distance must increase with increasing drift potential.
- The boom length must not exceed 75% of the wing span or 80% of the rotor blade diameter.
- Applications with wind speeds greater than 10 miles per hour are prohibited.
- Applications into temperature inversions are prohibited.
- · Liquid sprays must only be applied using rotary aircraft.
- · Spray must be released at the lowest height consistent with pest control objectives and flight safety.
- When applying liquid sprays the following directional buffers are required to protect aquatic vegetation in sites (including lakes, reservoirs, rivers, streams, marshes, ponds, estuaries, commercial fish ponds), or water used as an irrigation source, or crops.
  - 75 feet All aerial applications.
- Applicators must consider the effects of nozzle orientation and flight speed when determining droplet size spectrum.
- Applications must be made using equipment delivering an extremely coarse or coarser droplet size spectrum as defined by ASABE S572.1.

#### GROUND APPLICATIONS

- Applications with wind speeds greater than 10 miles per hour are prohibited.
- Applications into temperature inversions are prohibited.
- Apply spray at the lowest height that is consistent with pest control objectives.
- When applying liquid sprays the following directional buffers are required to protect aquatic vegetation in sites (including lakes, reservoirs, rivers, streams, marshes, ponds, estuaries, commercial fish ponds), or water used as an irrigation source, or crops.

50 feet - All broadcast applications.

15 feet - All handheld spot treatment applications.

 Applications must be made using equipment delivering an extremely coarse or coarser droplet size spectrum as defined by ASABE S572.1.

# STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Store product in original container only.

**PESTICIDE DISPOSAL:** Wastes resulting from the use of this product must 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, for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances. 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, for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances. 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. Clean container promptly after emptying the contents from this container into application equipment or mix tank and before final disposal using the following pressure rinsing procedure. Insert a lance fitted with a suitable tank cleaning nozzle into the container and ensure that the water spray thoroughly covers the top, bottom and all sides inside the container. The nozzle manufacturer generally provides instructions for the appropriate spray pressure, spray duration and/or spray volume. If the manufacturer's instructions are not available, pressure rinse the container for at least 60 seconds using a minimum pressure of 30 PSI with a minimum rinse volume of 10% of the container volume. Drain, pour or pump rinsate into application equipment or rinsate collection system. Repeat this pressure rinsing procedure two more times. Then, for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. 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. Do not burn, unless allowed by state and local ordinances.

Refillable Fiber Drums With Liners: Refillable container (fiber drum only). Refilling Fiber Drum: Refill this fiber drum with DuPont<sup>TM</sup> OUSTAR® containing sulfometuron methyl and 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. Do not burn, unless allowed by state and local ordinances. 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. Do not burn, unless allowed by state and local ordinances.

All Other Refillable Containers: Refillable container. Refilling Container: Refill this container with OUSTAR® containing sulfometuron methyl and 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. If damage is found, do not use the container, contact DuPont at the number below for instructions. Check for leaks after refilling and before transporting. If leaks are found, do reuse or transport container, contact DuPont at the number below for instructions. 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, use the following pressure rinsing procedure. Insert a lance fitted with a suitable tank cleaning nozzle into the container and ensure that the water spray thoroughly covers the top, bottom and all sides inside the container. The nozzle manufacturer generally provides instructions for the appropriate spray pressure, spray duration and/or spray volume. If the manufacturer's instructions are not available, pressure rinse the container for at least 60 seconds using a minimum pressure of 30 PSI with a minimum rinse volume of 10% of the container volume. Drain, pour or pump rinsate into application equipment or rinsate collection system. Repeat this pressure rinsing procedure two more times. Then, for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances. 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 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 at 1-800-441-3637, day or night.

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