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352-556

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY Washington, D.C. 20460

> OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION

JUN 1 5 2010

Tim McPherson E.I. du Pont de Nemours and Company 1007 Market Street Wilmington, DE 19898

Subject: Label Amendment (container handling) DuPont Matrix Herbicide (ABN: DuPont Resolve DF Herbicide) EPA Reg. No. 352-556 Application Dated May 3, 2010

Dear Mr. McPherson:

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is acceptable, provided you make the following changes:

- 1. Change the heading from "Inert Ingredients" to "Other Ingredients".
- 2. It is suggested that the resistance-management grouping symbols be placed on the front panel of the label as described in PR Notice 2001-5.
- 3. Change the heading to read "HAZARDS TO HUMANS AND DOMESTIC ANIMALS".
- 4. Change the heading to "PERSONAL PROTECTIVE EQUIPMENT (PPE)".
- 5. Change the PPE phrase to "If no such instructions for washables exist,".
- 6. Change the Environmental Hazards phrase to "equipment washwater or rinsate."
- 7. Throughout the label, change the heading from "GENERAL INFORMATION" to "**PRODUCT INFORMATION**".
- 8. On page 2, change the text to read "DuPont RESOLVE DF herbicide must be used only in accordance with **directions** on this label or in separate published DuPont **directions**. DuPont will not be responsible for losses or damage resulting from use of this product in any manner not specifically **directed** by DuPont."

Page 1 of 2

- Throughout the label, change advisory terms "recommend", "recommended", and "recommendations" to mandatory terms such as "directed/directions", "specified/specifications", "instructed/instructions" when used to describe application directions, methods, or rates.
- 10. On page 8, change the heading from "PRECAUTIONS" to "**RESTRICTIONS AND PRECAUTIONS**".

This registration currently contains two separate labels with different uses under different names; DuPont Matrix Herbicide (potatoes, potatoes grown for seed, tomatoes, citrus fruits, pome fruits, stone fruits, tree nuts, grapes, and non-crop areas) and DuPont Resolve DF Herbicide (field corn). A 'master label' containing all registered uses (including supplemental label uses) must be submitted under the primary brand name "DuPont Matrix Herbicide" to the Agency for review.

A stamped copy of your label is enclosed for your records. This label supercedes all previously accepted labels. You must submit one (1) copy of the final printed label before you release the product for shipment. Products shipped after eighteen (18) months from the date of this letter or the next printing of the label, whichever occurs first, must bear the new revised label. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA §6(e). Your release for shipment of the product constitutes acceptance of these conditions.

Sincerely,

Mindy on abh for

Jim Tompkins Product Manager 25 Herbicide Branch Registration Division (7505P)



# **DuPont<sup>™</sup> Resolve<sup>®</sup> DF**

herbicide

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DRAFT LABEL



# **DuPont**<sup>TM</sup>

# **Resolve**<sup>®</sup> **DF**

# herbicide

# DRY FLOWABLE

For Weed Control In Field Corn

Active Ingredients	By Weigh
Rimsulfuron	
N-((4,6-dimethoxypyrimid aminocarbonyl)-3-(ethylsu	
2-pyridinesulfonamide	25.0%
Inert Ingredients	75.0%
TOTAL	100.0%
EPA REG. NO. 352-556	EPA Est. No
Nonrefillable Container	
Net:	
0 P	

OR
Refillable Container
Net:

ACCEPTED with COMMENTS in EPA Letter Dated JUN 1 5 2010

Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No.

352-556

# KEEP OUT OF REACH OF CHILDREN CAUTION

# 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 INHALED:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

**IF SWALLOWED:** No specific intervention is indicated as the compound is not likely to be hazardous by ingestion. However, consult a poison control center or doctor if necessary.

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 emergency medical treatment information.

# PRECAUTIONARY STATEMENTS HAZARD TO HUMANS AND DOMESTIC ANIMALS

**CAUTION!** Causes moderate eye irritation. Harmful if absorbed through skin. Avoid contact with skin, eyes, or clothing. Avoid breathing dust or spray mist.

# PERSONAL PROTECTIVE EQUIPMENT

Some of the 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 chemicalresistant category selection chart.

Applicators and other handlers must wear:

Long-sleeve shirt and long pants.

Chemical resistant gloves Category A (such as butyl rubber, natural rubber, neoprene rubber, or nitrile rubber), all > 14 mils.

Shoes plus socks.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

# USER SAFETY RECOMMENDATIONS

USERS SHOULD: Wash hands before eating, drinking, chewing gum, using tobacco or using 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 by cleaning of equipment or disposal of equipment washwaters.

# **DIRECTIONS FOR USE**

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

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

#### 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 4 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 Category A (such as butyl rubber, natural rubber, neoprene rubber, or nitrile rubber), all > 14 mils. Shoes plus socks.

# **GENERAL INFORMATION**

DuPont<sup>™</sup> RESOLVE® DF herbicide should be used only in accordance with recommendations on this label or in supplemental DuPont publications. DuPont will not be responsible for losses or damage resulting from use of this product in any manner not specifically recommended by DuPont.

RESOLVE® DF herbicide is a water dispersible granule containing 25% active ingredient by weight. RESOLVE® DF is a selective herbicide for burndown and residual control of certain annual grass and broadleaf weeds when applied preemergence and postemergence to field corn. RESOLVE® DF may be applied to "Roundup Ready" corn in tank mix combinations with glyphosate herbicides such as "Roundup Original", "Roundup Weathermax", or similar products to add residual control for later emerging weeds. Residual weed control is dependent on rainfall or sprinkler irrigation for herbicide activation.

Do not apply to field corn grown for seed, to popcorn or to sweet corn. Do not apply preemergence to coarse-textured soils (sand, loamy sand or sandy loam) with less than 1% organic matter. Do not apply by air in the State of New York.

Apply RESOLVE® DF to field corn hybrids with a relative maturity (RM) of 77 days or more, including "food grade" (yellow dent, hard endosperm), waxy and High-Oil corn. Not all field corn hybrids of less than 77 days RM, not all white corn hybrids nor Hi-Lysine hybrids have been tested for crop safety, nor does DuPont have access to all seed company data. Consequently, injury arising from the use of RESOLVE® DF on these types of corn is the responsibility of the user. Consult with your seed supplier before applying RESOLVE® DF to any of these corn types. Seed company publications indicate "Warning", "Crop Response Warning", or "Sensitive" notations for the use of some ALS herbicides on corn hybrids of 77 CRM or higher. As noted in the seed company publications, DuPont sulfonylurea herbicides such as RESOLVE® DF should be used with caution on these hybrids. Consult with your local DuPont representative or the DuPont Label Web Site (http://cropprotection.dupont.com/) for any additional supplemental labeling information relative to potential corn hybrid sensitivity to RESOLVE® DF.

# APPLICATION INFORMATION WHEN TO APPLY

Do not apply more than a total of 2.0 oz RESOLVE®. DF (or 0.5 oz active ingredient rimsulfuron) during the crop year. This includes combinations of preemergence and postemergence applications of RESOLVE® DF, as well as rimsulfuron from application(s) of products such as DuPont<sup>™</sup> BASIS®, DuPont<sup>™</sup> STEADFAST®, and DuPont™ CLARION™ herbicides. Limit preemergence rates of RESOLVE® DF to a maximum of 1.25 oz product if following with postemergence applications of the rimsulfuroncontaining products noted above. Allow at least 3 weeks between preemergence applications of RESOLVE® DF and postemergence applications of the herbicides noted above. Make sequential applications after the corn has reached the 2-collar stage but before the corn exceeds the maximum application height listed on the respective product labels.

#### Fallow

#### Use rates

Apply RESOLVE® DF at 1 to 2 ounces per acre.

#### **Application Timing**

RESOLVE® DF may be used as a fallow treatment, in the spring or fall when the majority of weeds have emerged and are actively growing.

#### **Tank Mixtures in Fallow**

RESOLVE® DF may be used as a fallow treatment and may be tank mixed with other herbicides that are registered for use in fallow. Read and follow all instructions on this label and the labels of any tank mix partner before using any other herbicide in mixtures with RESOLVE® DF. If the recommendations on the tank mix partner label conflict with this RESOLVE® DF label, do not use in a tank mixture with RESOLVE® DF.

#### **Field Corn**

#### WHEN TO APPLY- Preemergence to the Crop

RESOLVE® DF may be applied preemergence or preplant to corn. Applications of RESOLVE® DF made before weed emergence will provide residual control of labeled weeds. Control of emerged weeds will require the addition of spray adjuvants as noted below.

#### Preemergence Rates

DuPont<sup>TM</sup> RESOLVE® DF may be applied at 0.5 - 2.0 oz product before corn emergence. See cumulative rimsulfuron rate limitations noted above. DuPont recommends a use rate of 1 - 1.5 oz/acre for most applications. Consult DuPont technical bulletins for additional rate recommendations.

#### WHEN TO APPLY - Postemergence to the Crop

Apply RESOLVE® DF to corn that is up to 12 inches tall. Do not apply to corn taller than 12 inches or exhibiting 6 or more leaf collars, whichever is more restrictive. Applications of RESOLVE® DF made after weed emergence will provide contact control of labeled weeds as well as limited residual control of later emergence.

#### **Postemergence** Rates

RESOLVE® DF may be applied at 0.5 - 2 oz/acre as a postemergence broadcast application. DuPont recommends a use rate of 1 oz/acre for most applications. Consult DuPont technical bulletins for additional rate recommendations.

#### Timing to Weeds

- Tank mixtures of RESOLVE® DF with glyphosate or glufosinate herbicides may be applied after weeds emerge but before they reach the maximum size listed on the glyphosate or glufosinate herbicide labels.
- Adequate soil moisture is required for optimum activity. Rainfall within 5 to 7 days after application will enhance RESOLVE® DF residual activity. If activating rainfall or sprinkler irrigation (>0.5 inch) is not received within 5-7 days after application, follow with a cultivation or with a sequential application of DuPont<sup>™</sup> ACCENT® herbicide, if needed.

Do not apply more than 1 ounce of RESOLVE® DF postemergence or 1.5 ounce preemergence unless instructed to do so by DuPont Technical Bulletins. Do not apply more than 2 ounces of RESOLVE® DF in a single use season.

# SPRAY ADJUVANTS

For control of emerged weeds, application of RESOLVE® DF must include a nonionic surfactant and an ammonium nitrogen fertilizer. If applied in tank mix combination with a glyphosate or glufosinate herbicide that contains a built-in adjuvant system, such as "Roundup Weathermax" or "Liberty", no additional surfactant needs to be added. Crop oil concentrate may be used in place of nonionic surfactant for burndown applications of RESOLVE® DF made before crop emergence. Consult local DuPont fact sheets, technical bulletins, and service policies prior to using other adjuvant systems. Products must contain only EPA-exempt ingredients (40 CFR 1001).

#### <u>Petroleum Crop Oil Concentrate (COC) or Modified Seed</u> <u>Oil (MSO)</u>

• Apply at 1% v/v (1 gallon per 100 gallons spray solution) or 2% under arid conditions.

- MSO adjuvants may be used at 0.5% v/v (0.5 gallon per 100 gallons spray solution) if specifically noted on adjuvant product labeling.
- Oil adjuvants must contain at least 80% high quality, petroleum (mineral) or modified vegetable seed oil with at least 15% surfactant emulsifiers.

#### Nonionic Surfactant (NIS)

- Apply at 0.25% v/v (1 qt per 100 gal spray solution).
- Surfactant products must contain at least 60% nonionic surfactant with a hydrophilic/lipophilic balance (HLB) greater than 12.

#### Ammonium Nitrogen Fertilizer

- Use 2 qt/acre of a high-quality urea ammonium nitrate (UAN) such as 28%N or 32%N, or 2 lb/acre of a spray-grade ammonium sulfate (AMS).
- Do not use liquid nitrogen fertilizer as the total carrier solution after crop emergence.

#### Special Adjuvant Types

• Combination adjuvant products may be used at doses that provide the required amount of NIS and ammonium nitrogen fertilizer. Consult product literature for use rates and restrictions.

Do not use any other adjuvant rates or mixtures with RESOLVE® DF unless instructed to do so on DuPont Technical Bulletins.

# WEEDS CONTROLLED/SUPPRESSED

#### PREEMERGENCE CONTROL

#### Grasses

- Barnyardgrass Bluegrass, annual\* Crabgrass, large\* Foxtail (bristly, giant, green, yellow) Panicum, fall\* Signalgrass, broadleaf\* Wheat, Volunteer Wild Oat\*
- \* partial control/suppression

# Broadleaves

Carpetweed\* Chamomile, false Cocklebur\* Filaree, Redstem Henbit Jimsonweed\* Kochia (ALS-sensitive) Lambsquarters, common Morningglory, ivyleaf\* Mustard (birdsrape, black) Nightshade\* (hairy, black) Palmer amaranth\* Pigweed (prostrate, redroot, smooth) Purslane, common Ragweed, common\* Russian thistle, seedling\* Smartweed, Pennsylvania\* Velvetleaf\*

\* partial control/suppression

#### **POSTEMERGENCE CONTROL**

#### Grasses (1 - 2")

Barley, volunteer Barnyardgrass Bluegrass, annual Crabgrass, large (1/2") Cupgrass, woolly (1") Foxtail (bristly, giant, green, yellow) Johnsongrass, seedling\* Millet, Wild Proso\* Panicum, fall Ouackgrass\* Ryegrass, Italian\* Shattercane (4") Signalgrass, broadleaf\* Stinkgrass\* Wheat, volunteer Wild oat\* Yellow nutsedge\* \* partial control/suppression

#### Broadleaves (1 - 3")

Alfalfa, volunteer^ Canada thistle\* Chickweed, common Cocklebur\* Dandelion (6" diameter) Henbit Kochia Lambsquarters, common\* Morningglory, ivyleaf\* Mustard, (birdsrape, black, wild) Nightshade, hairy\* Pigweed, (prostrate, redroot, smooth) Purslane, common\* Ragweed, common\* Shepherd's purse Smartweed, Pennsylvania\* Wild radish Velvetleaf\*

\*partial control/suppression ^ Except in California

#### TANK MIXTURES

DuPont<sup>™</sup> RESOLVE® DF may be tank mixed with full or reduced rates of other product registered for use in corn. Read and follow all manufactures label recommendations for the companion herbicide. If these recommendations conflict with this RESOLVE® DF label, do not use as a tank mixture with RESOLVE® DF.

#### **Preemergence to the Crop**

#### For Additional Control of Grasses and Broadleaves

RESOLVE® DF may be tank mixed with full or reduced rates of preemergence grass and broadleaf herbicides such as atrazine, DuPont<sup>™</sup> CINCH®, DuPont<sup>™</sup> CINCH® ATZ, "Harness", "Outlook", "Balance PRO" and "Lumax" to provide added residual activity or burndown activity on emerged weeds. Consult tank mix partner labeling for rate and soil-type restrictions.

#### **Postemergence to the Crop**

#### **Tank Mixtures with Glyphosate**

RESOLVE® DF may be tank mixed with glyphosate herbicides if applications are made to corn hybrids containing the "Roundup Ready" gene. Consult with your seed supplier to confirm the corn hybrid is "Roundup Ready" before making any herbicide application containing glyphosate herbicides. When used in tank mixture with glyphosate herbicides, 1 oz RESOLVE® DF will deliver improved burndown and/or residual activity on the following weeds, as compared to glyphosate used alone:

Alfalfa,volunteer\* Barley, volunteer Barnyardgrass Bluegrass, annual Canada thistle Chamomile, false Chickweed, common Cocklebur Crabgrass Dandelion (6" diameter) Filaree, redstem Foxtail (bristly, giant, green, yellow) Henbit Johnsongrass, seedling Kochia Lambsquarters, common Millet, wild proso Morningglory, ivyleaf Mustard (birdsrape, black, wild) Nightshade, hairy Panicum, fall Pigweed (prostrate, redroot, smooth) Purslane, common Quackgrass Ragweed, common Ryegrass, Italian Sandbur (field, longspine) Shepherd's purse Signalgrass, broadleaf Smartweed, Pennsylvania Stinkgrass Velvetleaf Wheat, volunteer Wild buckwheat Wild oat Wild radish Yellow nutsedge \* Except in California

#### Tank Mixtures with Glufosinate

RESOLVE® DF may be tank mixed with glufosinate herbicides if applications are made to corn hybrids containing the "Liberty Link" gene. Consult with your seed supplier to confirm the corn hybrid is "Liberty Link" before applying any herbicide containing glufosinate.

When used in tank mixtures with glufosinate herbicide, 0.75 oz RESOLVE® DF will deliver improved burndown and/or limited residual activity on the following weeds, as compared to glufosinate used alone:

Velvetleaf Pigweed, redroot Lambsquarters, common Foxtail (giant, yellow)

#### For Additional Control of Kochia

RESOLVE® DF may be tank mixed with 1/3 to 2/3 pint per acre of "Starane" for improved control of kochia. Use higher rates when weed infestation is heavy. Refer to the specific "Starane" label for application timing and restrictions. RESOLVE® DF may be tank mixed with "Starane" and additional 1/16 to 1/8 lb active ingredient dicamba (such as 2-4 fluid oz of "Banvel" or "Clarity") for broader spectrum weed control.

#### For Additional Control of Broadleaf Weeds

DuPont<sup>™</sup> RESOLVE® DF may be tank mixed with 2 pints per acre of "Lumax" or 2 1/3 pints per acre of "Lexar" for improved burndown or residual control of several broadleaf weeds including common waterhemp, common ragweed, common lambsquarters, and velvetleaf. When applying mixtures of RESOLVE® DF plus "Lumax" or "Lexar" the use of a nonionic surfactant is recommended. Refer to "Lumax" or "Lexar" labels for additional information regarding application timing, tank mixtures, adjuvants, and rotational crops.

#### For Additional Control of Broadleaf Weeds

RESOLVE® DF may be tank mixed with 0.5 to 0.75 fluid ounces per acre of "Impact" plus atrazine at 0.375 to 1.5 pounds active per acre for improved burndown or residual control of several broadleaf weeds including common waterhemp, common ragweed, common lambsquarters, and velvetleaf. When applying mixtures of RESOLVE® DF plus "Impact" at 0.5 fluid ounces per acre the use of methylated seed oil is recommended. Refer to "Impact" label for additional information regarding application timing, tank mixtures, adjuvants, and rotational crops.

#### FOR ALL APPLICATION TIMINGS

• Do not apply RESOLVE® DF tank mixtures with glyphosate herbicides to conventional corn hybrids that do not contain the "Roundup Ready" trait. • Do not apply RESOLVE® DF tank mixtures with glufosinate herbicides to conventional corn hybrids that do not contain the "Liberty Link" trait. To avoid crop injury or antagonism, apply the products indicated below at least seven days before or three days after the application of RESOLVE® DF Do not tank mix RESOLVE® DF with "Basagran" and "Laddok" or severe crop injury may occur. Do not tank mix RESOLVE® DF with foliar-applied organophosphate insecticides such as "Lorsban", malathion, parathion, etc., as severe crop injury may occur. Do not exceed labeled application rates. Do not tank mix RESOLVE® DF with other products that contain the same active ingredients as RESOLVE® DF (rimsulfuron) unless the label of either tank mix

partner specifies the maximum rate that may be used.

Other than the exceptions noted, and in addition to the tank mix partners indicated in the preemergence and postemergence sections above, RESOLVE® DF may be applied in tank mixture with glyphosate plus other products registered for use in field corn. RESOLVE® DF may be applied in tank mix combinations with full or reduced rates of other products provided:

- The tank mix product is labeled for the same timing, method of application, adjuvants, and use restrictions as RESOLVE® DF and other products used in the tank mixture.
- The tank mixture is not specifically prohibited on the label of the tank mix product.

#### **Tank Mixing Precautions:**

• Weed control and crop response with tank mixtures not specifically recommended in this label or in RESOLVE® DF fact sheets or technical bulletins are the responsibility of the user and manufacturer of the tank mix product.

- Read and follow all applicable use directions, precautions, and limitations specified on the respective product labels and fact sheets.
- A corn plant's predisposition to develop fused tissue emerging from the whorl (rattail) after the V-11 stage may increase when a product containing dicamba (i.e. "Clarity", "Marksman") is applied to small corn under early stressful conditions. Be aware of this when applying tank mixes with dicamba to small corn (V-3 stage or smaller) under stressful conditions. See ENVIRONMENTAL CONDITIONS for a description of these stressful conditions.

#### CHEMIGATION

Do not apply RESOLVE® DF through any type of irrigation system.

### MIXING INSTRUCTIONS

- 1. Fill the tank 1/4 to 1/3 full of water.
- 2. While agitating, add the required amount of RESOLVE® DF.
- 3. Continue agitation until the RESOLVE® DF is fully dispersed, at least 5 minutes.
- 4. Once the RESOLVE® DF is fully dispersed, maintain agitation and continue filling tank with water. RESOLVE® DF should be thoroughly mixed with water before adding any other material.
- 5. As the tank is filling, add tank mix partners (if desired).
- 6. If the mixture is not continuously agitated, settling will occur. If settling occurs, thoroughly re-agitate before using.
- 7. Apply RESOLVE® DF spray mixture within 48 hours of mixing to avoid product degradation.

If the selected companion herbicide has a ground or surface water advisory, consider this advisory when using the companion herbicide.

#### **BROADCAST APPLICATION**

Use a minimum of 15 gallons of water per acre (GPA) to ensure thorough coverage of the weeds and the best performance. Use a minimum of 10 GPA for light, scattered stands of weeds. For best performance, select nozzles and pressure that deliver MEDIUM spray droplets, as indicated, for example, by ASAE Standard S572. Nozzles that deliver COARSE spray droplets may be used to reduce drift, provided spray volume is increased to maintain coverage on small weeds.

For optimal product performance and minimal spray drift, adjust the spray boom to the lowest possible spray height recommended in manufacturers' specifications. Ensure that equipment is set up to avoid applying an excessive rate directly over the rows and into the corn plant whorl. Overlaps or starting, stopping, slowing, and turning while spraying may result in crop injury.

# **AERIAL APPLICATION**

Aerial application is not permitted in the State of New York. Use nozzle types and arrangements that will provide optimum spray distribution and maximum coverage at a minimum of 5 GPA. Do not apply during a temperature inversion, when winds are gusty, or when conditions favor poor coverage and/or offtarget spray movement.

# ENVIRONMENTAL CONDITIONS AND BIOLOGICAL ACTIVITY

DuPont<sup>™</sup> RESOLVE® DF is absorbed through the roots of plants, rapidly inhibiting the growth of susceptible weeds. Rainfall or sprinkler irrigation is needed to move RESOLVE® DF into the soil. Susceptible weeds will generally not emerge from preemergence application. In some cases susceptible weeds may germinate and emerge a few days after application, but growth then ceases and leaves become chlorotic three to five days after emergence. Death of leaf tissue and growing point will follow in some species, while others will remain green but stunted and noncompetitive.

The herbicidal action of RESOLVE® DF may be less effective on weeds stressed from adverse environmental conditions (such as extreme temperatures or moisture), abnormal soil conditions, or cultural practices.

# RESOLVE® DF ROTATIONAL CROP GUIDELINES

The following rotational intervals should be observed when using RESOLVE® DF:

#### **1 OZ MAXIMUM USE RATE**

Rotation Crop	Interval (months)
Corn, field	Anytime
Potatoes	Anytime
STS soybeans***	1
Tomato	1
Cereals, Winter (wheat)	3
Cereals, Spring (wheat, oats, barley)	9
Alfalfa*†	10
Cotton†	10
Canola <sup>†</sup>	10
Cucumber`	10
Flax	10
Peas	10
Rice **	10
Red Clover†	10
Sorghum†	10
Corn, pop or sweet	10
Soybeans	10
Snap beans, dry beans	10
Sunflower	10
Sugarbeets†	10
Crops Not Listed	18

\* On sprinkler irrigated fields in Idaho, Utah, and Northern Nevada it is best to use deep fall tillage such as plowing prior to planting alfalfa. Product degradation may be less on furrow irrigated soils and may result in some crop injury.

† 18 months in the Red River Valley region of ND and MN. In all other areas, the rotation intervals should be extended to 18 months if drought conditions prevail after application and before the rotational crop is planted, unless sprinkler irrigation has been applied and totals greater than 15" during the growing season.

\*\*For soils with pH less than 6.5.

\*\*\*Sulfonylurea Tolerant Soybean

### **2 OZ MAXIMUM USE RATE**

Rotation Crop	Interval (months)
Corn, field	Anytime
Potatoes	Anytime
Tomato	1
STS soybean***	. 4
Cereals, Winter (wheat)	3
Cereals, Spring (wheat, oats, barley)	9
Corn (pop or sweet)	10
Cotton†	10
Cucumber	10
Flax	10
Soybeans	10
Snap beans, dry beans	10
Sunflower	10
Crops Not Listed	18

<sup>†</sup>The rotation interval should be extended to 18 months if drought conditions prevail after application and before the rotational crop is planted, unless sprinkler irrigation has been applied and totals greater than 15" during the growing season.

\*\*\*Sulfonylurea Tolerant Soybean

### SPRAYER PREPARATION/CLEANUP

It is important that spray equipment is clean and free of previous pesticide deposits before using RESOLVE® DF and then properly cleaned out following application. Clean all application equipment before applying RESOLVE® DF. Follow the cleanup procedures specified on the label of the product previously sprayed. If no cleanup procedure is provided, use the procedure that follows. Immediately following applications of RESOLVE® DF, thoroughly clean all mixing and spray equipment to avoid subsequent crop injury.

#### Note:

- When cleaning spray equipment before applying RESOLVE® DF, read and follow label directions for proper rinsate disposal of the product previously sprayed.
- A steam cleaning of aerial spray tanks is recommended to dislodge any visible pesticide deposits.
- When spraying or mixing equipment will be used over an extended period to apply multiple loads of RESOLVE® DF, partially fill the tank with fresh water at the end of each day of spraying, flush the boom and hoses, and allow to sit overnight.

#### **Cleanup Procedure**

- 1. Drain the tank and thoroughly hose down the interior surfaces. Flush the tank, hoses, and boom with clean water for a minimum of 5 min.
- 2. Partially fill the tank with clean water and add one gal of household ammonia\*\*\* (containing 3% active) for every 100 gal of water. Finish filling the tank with water, then flush the cleaning solution through the hoses, boom, and nozzles. Add more water to completely fill the tank and allow to agitate/recirculate for at least 15 min. Again, flush the hoses, boom, and nozzles with the cleaning solution, then drain the tank.
- 3. Repeat Step 2.
- 4. Remove the nozzles and screens and clean separately in a bucket containing the cleaning agent and water.

5. Thoroughly rinse the tank with clean water for a minimum of 5 min, flushing the water through the hoses and boom.

\*\*\*Equivalent amounts of an alternate strength ammonia solution or a tank cleaner recommended in the DuPont bulletin "Sulfonylurea Herbicides, A Guide to Equipment Cleanout," may be used.

# 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 (>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 Wind, Temperature and Humidity, and Temperature Inversions sections of this label.

#### **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.

#### **BOOM HEIGHT**

Set the boom at the lowest height that provides uniform coverage and reduces the exposure of droplets to evaporation and wind. For ground equipment, 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 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 APPLICATIONS DURING 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.

#### **TEMPERATURE INVERSIONS**

Drift potential is high during a temperature inversion. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain close to the ground and move laterally in a concentrated cloud. Temperature 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 an 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.

#### AIR-ASSISTED (AIR BLAST) FIELD CROP SPRAYERS

Air-assisted field crop sprayers carry droplets to the target via a downward-directed airstream. 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 and is configured properly, and that drift is not occurring.

# 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.

# 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.

### SOIL INSECTICIDE INTERACTION INFORMATION

DuPont<sup>™</sup> RESOLVE® DF may interact with certain insecticides previously applied to the crop. Crop response varies with field corn type, insecticide used, insecticide application method, and soil type.

RESOLVE® DF may be applied to corn previously treated with "Fortress", "Aztec", or "Force" insecticides or nonorganophosphate (OP) soil insecticides regardless of soil type.

- Do not apply RESOLVE® DF within 60 days of crop emergence where an organophosphate insecticide (such as Counter) was applied as an in-furrow treatment since crop injury may occur. Also, allow at least 60 days between a preemergence or pre-plant application of RESOLVE® DF and application of an organophosphate insecticide since crop injury may result.
- DO NOT APPLY RESOLVE® DF to corn previously treated with "Counter" 15G or to corn treated with "Counter" 20CR infurrow or over the row at cultivation.
- Applications of RESOLVE® DF to corn previously treated with "Counter" 20 CR, "Lorsban", or "Thimet" may cause unacceptable crop injury, especially on soils of less than 4% organic matter.

# PRECAUTIONS

Injury or loss of desirable trees or vegetation may result from failure to observe the following:

- Do not apply RESOLVE® DF or drain or flush application equipment on or near desirable trees or other plants, or on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots.
- Do not use on lawns, walks, driveways, tennis courts, or similar areas.
- Prevent drift or spray to desirable plants.
- Do not contaminate any body of water.
- Thoroughly clean application equipment immediately after use. (See Sprayer Cleanup section of this label for instructions).

Crop injury may occur following an application of RESOLVE® DF if there is a prolonged period of cold weather and/or in conjunction with wet soils.

Do not graze, feed forage, grain or fodder (stover) from treated areas to livestock within 30 days of RESOLVE® DF application.

#### 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 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>™</sup> RESOLVE® DF Herbicide containing rimsulfuron 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 RESOLVE® DF containing rimsulfuron 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 not 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 Foil 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 at 1-800-441-3637, day or night.

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