UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

November 18, 2015

Mr. S.K. Theodorakis
U.S. Product Registration Manager
E.I. du Pont de Nemours and Company
Dupont Crop Protection
P.O. Box 30
Newark, DE 19714-0030

Subject: Label Amendment – general label updates
Product Name: Dupont Realm Q Herbicide
EPA Registration Number: 352-837
Application Date: 11/4/2015
Decision Number: 510981

Dear Mr. Theodorakis:

The amended label referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, is acceptable. This approval does not affect any conditions that were previously imposed on this registration. You continue to be subject to existing conditions on your registration and any deadlines connected with them.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one copy of the final printed labeling before you release the product for shipment with the new labeling. In accordance with 40 CFR 152.130(c), you may distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. “To distribute or sell” is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.

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

Your release for shipment of the product constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance

with FIFRA section 6. If you have any questions, please contact Lisa Pahel by phone at (703) 342-0459, or via email at pahel.lisa@epa.gov.

Sincerely,

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

Enclosure

DuPont™ Realm® Q

HERBICIDE

GROUP	2 and 27	HERBICIDE

For Postemergence Use in Field Corn Grown for Grain or Silage

Active Ingredients	*By Weight*
Rimsulfuron N-((4,6-dimethoxypyrimidin-2-yl) aminocarbonyl)-3-(ethylsulfonyl)-2-pyridinesulfonamide	7.50%
Mesotrione	31.25%
Other Ingredients	61.25%
TOTAL	100.0%

EPA Reg. No. 352-837

Nonrefillable Container

Net: _____

OR

Refillable Container

Net: _____

ACCEPTED
11/18/2015
Under the Federal Insecticide, Fungicide and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 352-837

EPA Est. No. _____

KEEP OUT OF REACH OF CHILDREN

CAUTION

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 by a poison control center or doctor. Do not give anything to an unconscious person.

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.

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. Avoid contact with eyes or clothing.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Long-sleeve shirt and long pants.
- Chemical resistant gloves made of any waterproof material such a nitrile rubber, natural rubber, neoprene rubber, or butyl rubber.
- Shoes plus socks.

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.

Engineering Control Statements

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the 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

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.

ENVIRONMENTAL HAZARDS

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

Surface Water Advisory

This product may contaminate water through drift of spray in wind. This product has a high potential for runoff for several weeks after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. A level, well maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential for contamination of water from runoff. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours. Sound erosion control practices will reduce this product's contribution to surface water contamination.

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.

DuPont™ REALM® Q herbicide, also referred to below as REALM® Q or DuPont™ REALM® Q, must be used only in accordance with instructions on this label, in separately issued labeling or exemptions under FIFRA (Supplemental Labels, Special Local Need Registrations, FIFRA Section 18 exemptions), or as otherwise permitted by FIFRA. Always read the entire label, including the Limitation of Warranty and Liability.

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 12 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

Coveralls.
Chemical resistant gloves made of any waterproof material such a nitrile rubber, natural rubber, neoprene rubber, or butyl rubber.
Shoes plus socks.

PRODUCT INFORMATION

REALM® Q is a selective herbicide for burndown and residual control of certain annual grass and broadleaf weeds when applied postemergence to field corn grown for grain or silage.

REALM® Q can be tank mixed with a variety of herbicides to improve burndown and residual control.

REALM® Q is absorbed through the roots and leaf tissue of plants, rapidly inhibiting the growth of susceptible weeds. Rainfall or sprinkler irrigation is needed to move REALM® Q into the soil. Susceptible weeds will generally not emerge from a postemerge application with activating rainfall or sprinkler irrigation (>0.5 inch). 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, stunted and noncompetitive.

DuPont™ REALM® Q is best used as part of a sequential application herbicide program, following a before-planting application of DuPont™ ALLUVEX™ , DuPont™ BASIS® Blend, DuPont™ BREAKFREE® or DuPont™ CINCH® brands, DuPont™ INSTIGATE™ , DuPont™ LEADOFF®, DuPont™ PREQUEL®, DuPont™ RESOLVE® Q herbicides and/or other pre-applied corn herbicides. Refer to the label of the respective corn herbicide partner for specific use directions.

For post emergence applications of REALM® Q, if activating rainfall or sprinkler irrigation (>0.5 inch) is not received within 5 to 7 days after application, follow with a cultivation or with a sequential application of DuPont™ ACCENT® Q herbicide, DuPont™ REVULIN™ Q herbicide, DuPont™ STEADFAST® Q, or glyphosate such as ABUNDIT® Extra as needed.

RESTRICTIONS

Do not apply to field corn grown for seed, to popcorn or to sweet corn.

Do not apply more than 4.0 oz of REALM® Q per acre per year.

Do not apply more than 1.0 oz active ingredient rimsulfuron in a year. This includes postemergence applications of REALM® Q, as well as rimsulfuron from applications of products such as ALLUVEX™ , BASIS® Blend, INSTIGATE™ , LEADOFF®, PREQUEL®, RESOLVE® Q, RESOLVE® SG and STEADFAST® Q.

Do not apply more than 3.85 ounces active ingredient of mesotrione in a year. This includes postemergence applications of REALM® Q, as well as mesotrione from application(s) of products such as INSTIGATE or REVULIN™ Q. Do not make the second application of a mesotrione containing product within 14 days of the first application.

Do not tank mix REALM® Q with “Basagran” or severe crop injury may occur.

Do not tank mix REALM® Q with foliar-applied organophosphate or carbamate insecticides such as chlorpyrafos (“Lorsban”), malathion, parathion, etc, as severe crop injury may occur. To avoid crop injury or antagonism, apply these products at least 7 days before or 7 days after the application of REALM® Q.

Do not apply REALM® Q within 45 days of crop emergence where the organophosphate insecticide, terbufos ("Counter") was applied since crop injury may occur. Applications made to corn previously treated with chlorpyrifos or other similar organophosphate insecticides may result in unacceptable crop injury. Any crop injury or yield loss resulting from these applications are the responsibility of the grower.

Do not apply REALM™ Q to corn that exhibits herbicide injury from previous applications made to the current or preceding crop.

Do not use liquid nitrogen fertilizer as the total carrier solution for postemergence applications.

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

- Do not apply REALM® Q 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 contract with their roots.

- Do not use on lawns, walks, driveways, tennis courts, or similar areas.

- Do not contaminate any body of water.

Do not graze, feed forage, grain or fodder (stover) from treated areas to livestock within 45 days of REALM® Q application.

Do not harvest grain within 70 days or harvest forage or stover within 45 days of REALM® Q application.

Do not use aerial application to apply REALM® Q unless specified otherwise under the specific crop section on the label.

Do not apply this product through any type of irrigation system.

This product contains 0.0375 pound of the safener isoxadifen-ethyl per pound of product. Applying the maximum application rate of REALM® Q at 4 ounces per acre will deliver 0.01 pound of isoxadifen-ethyl per acre. When tank mixing for applications to field corn, do not apply more than a total of 0.17 pound of isoxadifen-ethyl per acre per year.

PRECAUTIONS

REALM® Q may interact with certain insecticides previously applied to the crop. Crop response varies with field corn type, insecticide used, insecticide application methods, and soil type.

REALM® Q may be applied to corn previously treated with Fortress, SmartChoice, Aztec, or Force insecticides, or other non-organophosphate soil insecticides regardless of soil type.

REALM® Q may be applied with pyrethroid type insecticides such as “Asana” or “Warrior” or with diamide type insecticides such as DuPont™ PREVATHON®.

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

Prevent drift or spray onto desirable plants.

Thoroughly clean application equipment immediately after use (See Sprayer Cleanup section of this label).

RESISTANCE MANAGEMENT

DuPont™ REALM® Q, which contains the active ingredients rimsulfuron and mesotrione, is both a Group 2 and a Group 27 herbicide based on the mode of action classification system of the Weed Science Society of America.

When herbicides with mode of action classifications that affect the same biological 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 and movement of plant material between treatment areas on equipment 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 recommendation available in your area.

INTEGRATED PEST MANAGEMENT

REALM® Q should be integrated into an overall weed and pest management strategy whenever the use of a herbicide is required. Practices known to reduce weed development (tillage, crop competition) and herbicide use (weed scouting, proper application timing, banding) should be followed wherever possible. Consult local agricultural and weed authorities for additional IPM strategies established for your area.

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 consultant or other qualified authorities to determine appropriate action treatment threshold levels for treating specific pest / crop systems in your area.

APPLICATION INFORMATION

Field Corn Grown for Grain or Silage - Postemergence

Rate

Apply REALM® Q at 4.0 ounces per acre as a postemergence broadcast application. Consult DuPont technical bulletins, fact sheets or supplemental labeling for additional application rate information.

Timing to Crop

REALM® Q may be broadcast to corn up to 20 inches tall or that is exhibiting up to and including 6 leaf collars (V6), whichever is more restrictive.

While REALM® Q has a wide application window, research has shown best results are obtained when applications are made early postemergence (row n' go) when corn and weeds are small. Target post applications to corn generally less than 12" tall for best overall performance.

Applications of REALM® Q made after weed emergence will provide contact control of labeled weeds as well as residual control of later emerging weeds.

Timing to Emerged Weeds

Apply REALM® Q when grasses and broadleaf weeds are young and actively growing, but before they exceed sizes listed on this label. Applications made to weed sizes greater than those listed on this product label may result in incomplete control. Grass and broadleaf weed competition due to incomplete control may reduce corn yields.

On glyphosate tolerant corn, glyphosate such as ABUNDIT® Extra may be applied with REALM® Q after weeds emerge but before they reach the maximum size listed on the glyphosate herbicide label.

On "Liberty Link" corn, glufosinate may be applied with REALM® Q after weeds emerge but before they reach the maximum size listed on the glufosinate herbicide label.

REALM® Q is rainfast in 4 hours.

Sequential Application - Pre

REALM® Q may be used as a sequential application in a planned postemergence weed control program in corn following a preemergence herbicide.

Apply preemergence herbicide products such as DuPont™ ALLUVEX™ , DuPont™ BASIS® Blend, DuPont™ BREAKFREE®, BREAKFREE® NXT or DuPont™ CINCH® brands, DuPont™ INSTIGATE™ , DuPont™ LEADOFF®, DuPont™ PREQUEL®, DuPont™ RESOLVE® Q herbicides. Refer to the preemergence herbicide label for use restrictions, application information, rotational crop guidelines, and cautionary statements prior to applying REALM® Q.

Do not apply DuPont™ REALM® Q to corn that exhibits herbicide injury from previous applications made to the current or preceding crop.

Spray Adjuvants

For control of emerged weeds, applications of REALM® Q must include a crop oil concentrate or a high surfactant oil concentrate (HSOC).

The use of a nonionic surfactant (NIS) instead of a COC or HSOC is allowed, but the weed control achieved with COC or HSOC is consistently better than NIS. **The use of methylated seed oil (MSO) adjuvants or MSO blend adjuvants may cause severe crop injury to occur. MSO adjuvants are not recommended.**

In addition to COC or HSOC, always add spray grade UAN (e.g., 28-0-0) to the spray solution or AMS, except if precluded elsewhere on this label.

When applied in tank mix combination with a glyphosate that contains a built-in adjuvant such as ABUNDIT® Extra, ensure the total adjuvant load is equivalent to the recommendations on this label. Select adjuvants authorized for use with both products.

Consult local DuPont fact sheets, technical bulletins or supplemental labels prior to using other adjuvant systems. Products must contain only EPA-exempt ingredients.

Do not use with spray additives that alter the pH of the spray solution below 5.0 or above 9.0 as rapid product degradation can occur. Spray solutions of pH 6.0 – 8.0 allow for optimum stability of REALM® Q.

Petroleum Crop Oil Concentrate (COC)

- Apply at 1% (1 gallon per 100 gallon spray solution), or 2% under arid conditions.
- Oil adjuvants must contain at least 80% high quality, petroleum (mineral) oil with at least 15% surfactant emulsifiers.

High Surfactant Oil Concentrate (HSOC)

- Apply at 0.5% (2 quarts per 100 gallons spray solution).

Nonionic Surfactant (NIS)

- Apply at 0.25% v/v (1 quart per 100 gallon spray solution).
- Surfactant products must contain at least 60% nonionic surfactant with a hydrophilic/lipophilic balance (HLB) greater than 12.
- Do not use liquid nitrogen fertilizer as the total carrier solution for postemergence applications.

Ammonium Nitrogen Fertilizer

- Use 2 quarts per acre of a high quality urea ammonium nitrate (UAN) such as 27%N or 32%N, or 2 pounds per acre of a spray-grade ammonium sulfate (AMS).

Special Adjuvant Types

- Combination adjuvant products may be used at doses that provide the required amounts of NIS, COC, and/or ammonium nitrogen fertilizer. Consult product literature for use rates and restrictions.

Weeds Controlled/Suppressed

Refer to the Spray Adjuvants section for additional information on proper adjuvant selection.

Table 1. Weeds Controlled with a Postemergence Application of DuPont™ REALM® Q

Common Name	4.0 oz/A Weeds < 5 Inches Tall	4.0 oz/A + atrazine Weeds <5 Inches Tall
Amaranth, Palmer*	PC[2]	C[2]
Amaranth, Powell	C	C
Amaranth, spiny	C	C
Atriplex	C	C
Barnyardgrass	C	C
Bluegrass, annual	C[2]	C
Broadleaf signalgrass	PC[1]	C[1]
Buckwheat, wild	PC	PC
Buffalobur	C	C
Burcucumber	C[1]	C
Carpetweed	C	C
Carrot, wild	C	C
Chickweed, common	C	C
Cocklebur, common	C	C
Crabgrass, large	C[1]	C[1]
Dandelion	C	C
Dock, curly	PC	PC
Foxtails (bristly, giant, green, yellow)	C[3]	C[3]
Galinsoga	C	C
Hemp	C	C
Horsenettle	C	C
Itchgrass	C	C
Jimsonweed	C	C
Johnsongrass, seedling	PC	C
Knotweed, prostrate	PC	PC
Kochia*	C[1]	C[1]
Lambsquarters, common	C	C
Mallow, Venice	C	C
Marestail (horseweed)*	PC	C
Morningglogy, entireleaf; ivyleaf; pitted	C[1]	C[1]
Mustard, wild	C	C
Nightshade, black, eastern black	C	C
Nightshade, hairy	C	C
Nutsedge, yellow	PC	PC
Panicum, Texas; browntop	C[2]	C[2]
Panicum, fall	C	C
Pigweed, redroot, smooth, tumble	C	C
Pokeweed, common	PC	PC
Potatoes, volunteer	C	C
Pusley, Florida	C[1]	C[1]
Quackgrass	PC	C
Ragweed, common	C[2]	C[2]
Ragweed, giant	C[2]	C[2]
Ryegrass*, Italian, perennial	PC	C
Sandbur, field; longspine	C[2]	C[2]
Sesbania, hemp	C	C
Shattercane	C[3]	C[3]
Sida, prickly (teaweed)	PC[2]	C[2]
Smartweed, ladysthumb, pale, Pennsylvania	C	C
Sorghum album	C	C
Stinkgrass	PC	C
Sunflower, common	C	C
Thistle, Canada	PC	PC
Timothy	C	C
Velvetleaf	C	C[4]
Volunteer cereals	C	C
Waterhemp*	PC[2]	C[2]
Wild oats	C	C
Wild proso millet	PC[3]	C[3]
Wirestem muhly	C	C
Witchgrass	C	C
Woolly cupgrass	C[1]	C[3]

[1] Apply before weed exceeds 2 inches in height
[2] Apply before weed exceeds 3 inches in height
[3] Apply before weed exceeds 4 inches in height
* ALS resistant biotypes are known to exist.
C = Control PC = Partial Control

DuPont™ REALM® Q 4.0 oz/acre with Glyphosate

Glyphosate may be tank mixed with post emerge applications of REALM® Q when made to corn hybrids containing the "Roundup Ready" gene. Refer to the Spray Adjuvants section for additional information on proper adjuvant selection.

When used in a tank mixture with glyphosate herbicide, 4.0 ounces REALM® Q will deliver improved burndown and/or residual activity on the following weeds.

Alfalfa, volunteer
Canada thistle
Chamomile, false
Crabgrass
Filaree, redstem
Henbit
Johnsongrass, seedling
Millet, Wild Proso
Morningglory, ivyleaf
Mustard (birdsrape, black, wild)
Purslane, common
Quackgrass
Ryegrass, Italian
Sandbur (field, longspine)
Shepherd's purse
Signalgrass, broadleaf
Stinkgrass
Waterhemp, (smooth, tall)
Wild buckwheat
Wild oat
Yellow Nutsedge

REALM® Q 4.0 oz/acre with Glufosinate

REALM® Q may be tank mixed with glufosinate herbicide 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.

Tank Mixtures - Additional Control of Broadleaf and Grass Weeds

REALM® Q may be tank mixed with other post-emerge labeled grass and broadleaf herbicides such as Atrazine, dicamba, DuPont™ CINCH®, and DuPont™ BREAKFREE® brands, DuPont™ ACCENT® Q and DuPont™ REVULIN™ Q to provide added residual or burndown activity on emerged weeds. Consult tank mix partner labeling for rate and soil-type restrictions. Read and follow all manufacturers' label instructions for the companion herbicide(s). Do not use a tank mix partner product if its label conflicts with this REALM® Q label.

Ensure the tank mix product is labeled for the same timing, method of application, adjuvants, and use restrictions as REALM® Q, as well as other products used in the tank mixture.

As EC formulations, acetochlor or metolachlor such as, CINCH®, BREAKFREE® or BREAKFREE® NXT herbicides can act like an adjuvant in certain combinations and thus increase the risk of crop injury. If these tank mixtures are used, the user should leave the crop oil concentrate (COC) out of the adjuvant mix.

REALM® Q may be tank mixed with CINCH® ATZ, CINCH® ATZ Lite, BREAKFREE® ATZ, BREAKFREE® ATZ NXT, BREAKFREE® ATZ LITE, BREAKFREE® NXT LITE or products that contain the same active ingredients, but special attention must be paid to adjuvant selection and/or application method. If any of these tank mixtures are used the user should leave the urea ammonium nitrate (UAN) out of the mix. There is still a risk of temporary crop injury in the form of leaf burn with these mixtures. To further reduce the risk of crop injury, the user should also leave out the crop oil concentrate (COC), and replace it with a nonionic surfactant (NIS).

The control of emerged weeds may be reduced due to less than optimum adjuvant effect or weed coverage and there is still a risk of temporary crop injury in the form of leaf burn with these mixtures.

The crop safety of all possible tank mixture combinations with REALM® Q which may include physically compatible pesticides, fertilizers, adjuvants and/or additives has not been tested.

DuPont will not be responsible for any crop injury arising from the use of a tank mixture that is not specifically described on the REALM® Q product labeling or in other DuPont product use instruction.Read and follow all applicable use directions, precautions, and limitations specified on the respective product labels, technical bulletins, fact sheets, and supplemental labels. Always follow the tank mix instructions of the product label that is most restrictive.

Tank Mix Compatibility Testing

Perform a jar test prior to tank mixing to ensure compatibility of DuPont™ REALM® Q and other pesticides. Use a clear quart jar with lid and mix the tank mix ingredients in their relative proportions. Invert the jar containing the mixture several times and observe the mixture for approximately 1/2 hour. If the mixture balls-ups, forms flakes, sludge, gel, oily film or layers, or other precipitates, it is not compatible and the tank mix combination should not be used.

Mixing Instructions

Water Carrier Instructions

1. Fill the tank 1/4 to 1/3 full of water
2. While agitating, add the required amount of REALM® Q

3. Continue agitation until the DuPont™ REALM® Q is fully dispersed
4. Once dispersed, maintain agitation and continue filling tank with water
5. As tanks fills, add desired tank mix partners
6. If not continuously agitated, settling will occur. If settling occurs, thoroughly re-agitate before using
7. Apply mixture within 48 hours of mixing for best results

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

Application and Spray Volumes

Ground Application

Use a minimum of 15 gallons of water per acres (GPA) to ensure thorough coverage of the weeds and the best performance. Use a minimum of 10 GPA for light, scattered stands of weeds.

Avoid spray overlaps as excessive rates may result in adverse crop response.

Spray nozzles should be uniformly spaced, the same size and type, and should provide accurate and uniform application. Use spray nozzles that provide medium to coarse droplet size to provide good coverage and avoid drift. Good weed coverage is essential for optimum weed control. Boom height for broadcast over-the-top applications should be based on the height of the crop – at least 15 inches above the crop canopy.

Ensure that all in-line strainer and nozzle screens in the sprayer are 50-mesh or coarser.

Maintain adequate agitation at all times, including momentary stops.

Aerial Application

REALM® Q may be applied aerially for preemergence or postemergence weed control only in the following states: Alabama, Arkansas, Colorado, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Minnesota, Mississippi, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, South Dakota, Tennessee, and Texas.

Restriction: For aerial application use only nozzles producing coarse-ultra coarse droplets. Do not use nozzles producing fine-medium size droplets.

Applications must be made in a minimum of 2 gallons of water per acre.

ROTATIONAL CROP GUIDELINES

Rotational crops vary in their crop response to low concentrations of REALM® Q remaining in the soil. The amount of REALM® Q that may be present in the soil depends on soil moisture, soil temperature, application rate, elapsed time since application and other environmental factors. When REALM® Q is used in combination with other products, always follow the most restrictive rotational crop requirements.

The following rotational intervals must be observed when using REALM® Q:

4.0 OZ USE RATE PER ACRE PER YEAR

Rotational Crop	Interval (months)
Corn, Field	Anytime
Cereals, Winter	4
Cereals, Spring (wheat, oats, barley)	9
Alfalfa*†	10
Canola†	10
Corn, pop, seed or sweet	10
Cotton†	10
Flax	10
Peas	10[1,2]
Peanuts	10
Potatoes	10
Rice	10
Snap beans	10[1,2]
Sorghum†	10
Soybeans	10
Sunflower	10
Sweet potatoes/yams**	10
Tobacco	10
Cucurbits	18
Dry beans	18
Red clover	18
Sugar beets	18
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.

** On soils with pH 6.5 or less.

†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.

[1] Plant these rotational crops only if the following criteria below have been met. If all criteria are not met, plant peas and snap beans a minimum of 18 months following DuPont™ REALM® Q application.

- A minimum of 20" of rainfall plus irrigation has been received between application and planting of the rotational crop.
- Soil pH is 6.0 or greater.
- Application of REALM® Q applied no later than June 30 the year preceding rotational crop planting.
- No other HPPD herbicides were applied the year prior to planting peas and snap beans.

[2] Do not plant peas or snap beans on sand, sandy loam or loamy sands in Minnesota or Wisconsin.

- Planting unspecified rotational crops, or those rotational crops that are specified at shorter than listed intervals may result in injury to the rotational crop.

SPRAYER PREPARATION/CLEANUP

It is important that spray equipment is clean and free of previous pesticide deposits before using REALM® Q, and then properly cleaned out following application. Clean all application equipment before applying REALM® Q. 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 REALM® Q, thoroughly clean all mix and spray equipment to avoid subsequent crop injury.

Note:

When cleaning spray equipment before applying REALM® Q, read and follow label directions for proper rinsate disposal of the product previously sprayed.

When spraying or mixing equipment will be used over an extended period to apply multiple loads of REALM® Q, 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 hose down the interior surfaces with clean water
2. Partially fill the tank with clean water and add one gallon of household ammonia* (containing 3% active) for every 100 gallons of water. Finish filling tank with water, then flush the cleaning solution through the hoses, boom, and nozzles. Add more water to completely fill the tank and allow agitating / re-circulating for at least 15 minutes. Again, flush the hoses, boom, and nozzles with the cleaning solution, then drain the tank.
3. Repeat Step 2

4. Remove the nozzles, screens and the end caps of sprayer booms 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 minutes, flushing the water through the hoses and boom.

*Equivalent amount 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 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

- 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.
- Boom Application Height - Applications made at the lowest boom 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 APPLICATION DURING GUSTY OR WINDLESS CONDITIONS.

Local terrain can influence wind patterns. Every applicator should 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. If neither is 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 indicated good vertical air mixing.

Applications into temperature inversions are prohibited.

ADDITIONAL SPRAY DRIFT PRECAUTIONS FOR AERIAL APPLICATIONS

The distance of the outer-most nozzles on the boom must not exceed ¾ the length of the wingspan or rotor. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees. Where states have more stringent regulations, they must be observed. Spray must be released at the lowest height consistent with effective weed control and flight safety. For best results, quantifiable pattern test each specific aerial application vehicle used for aerial application of DuPont™ REALM® Q initially and every year thereafter.

RESTRICTION: For aerial application use only nozzles producing coarse-ultra coarse droplets. Do not use nozzles producing fine-medium size droplets.

For some use patterns, reducing the effective boom length to less than ¾ of the wingspan or rotor length may further reduce drift without reducing swath width. Do not make applications at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind. When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Increase swath adjustment distance with increasing drift potential (higher wind, smaller drops, etc.

Applications with wind speeds greater than 10 mph are prohibited.

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 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, that it is configured properly, and that drift potential has been minimized.

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

SENSITIVE AREAS

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

DRIFT CONTROL ADDITIVES

Using product compatible drift control additives can reduce drift potential. When a drift control additive is used, read and carefully observe cautionary statements and all other information on the additive's label. If using an additive that increases viscosity, ensure that the nozzles and other application equipment will function properly with a viscous spray solution.

Preferred drift control additives have been certified by the Chemical Producers and Distributors Association (CPDA).

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Store product in original container only. Store in a cool, dry place.

PESTICIDE DISPOSAL: Waste resulting from the use of this product 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™ REALM® Q herbicide containing rimsulfuron and mesotrione 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 DuPont™ REALM® Q containing rimsulfuron and mesotrione 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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