**WPOND** 

# **DuPont<sup>TM</sup> Steadfast**®

herbicide

## DRAFT LABEL



"...... A Growing Partnership With Nature"

#### DUPONT!!! STEADFAST® HIGHLIGHTS 🧼 \*STEADFAST® provides selective postemergence grass ant broadeat weed control in field con Apply are water \$1/4 ounce product peragre Include an adjuvant as recommended in this label. The cuse of mitrogen fertilizer is required in addition to the use of a crop oil concentrate or nonionic surfactant unless otherwise noted See SPRAY ADJUVANT. STEADEAST® may be applied by ground (broadcast or cound to day aire For proving application, apply in a minimum of 15 gallons of water at 20-40 PSI using flat fan nozzles for best results. For aerial application, use nozzle types and arrangements that provide optimum spray distribution and maximum coverage at a minimum of 5 GPA Recommended tank mixes are specified on this label. See TANK MIX APPLICATIONS. Apply to actively growing grass and broadleaf weeds at the recommended sizes. See RATE Applications made to grasses or corn under stress may affect the performance or in some cases reduce crop tolerance. See ENVIRONMENTAL CONDITIONS.

Consult label text for complete instructions. Always read and follow label directions for use:

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# **DuPont<sup>™</sup> Steadfast®**

#### herbicide

For use in Field Corn

This product is a water-dispersible granule containing 75% active ingredient by weight.

Active Ingredients	By Weight
Nicosulfuron	
2-[[(4,6-dimethoxypyrimidin-2-yl)aminocarbonyl]aminosulfonyl]-N,N-dimethyl-3-pyridinecarboxamide	50%
Rimsulfuron	
N((4,6-dimethoxypyrimidin-2- yl) aminocarbonyl)-3-(ethylsulfonyl) -2-pyridinesulfonamide	25%
Inert Ingredients	25%
TOTAL	100%

EPA Reg. No. 352-608

# 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.

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.

## ACCEPTED MAY 25 2005

Under the Federal Insecticide, Fundicide, and Redemicide Act, as amended for the pesticide registered under EPA Res. No. 352-608

# PRECAUTIONARY STATEMENTS (cont'd) HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Caution! Causes moderate eye irritation. Harmful if absorbed through skin. Avoid contact with skin, eyes or clothing.

#### PERSONAL PROTECTIVE EQUIPMENT

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

Applicators and other handlers must wear:

Long-sleeved shirt and long pants.

Chemical Resistant Gloves Category A (such as butyl rubber, natural rubber, neoprene rubber, or nitrile rubber) ≥14 mls.

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 the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

#### **ENVIRONMENTAL HAZARDS**

Do not apply directly to water, 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 rinsewater. Do not apply where/when conditions could favor runoff. Do not apply if a severe storm is expected within 24 hours.

#### **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 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) ≥14 mls.

Shoes plus socks.

DuPont™ STEADFAST® 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.

#### **GENERAL INFORMATION**

STEADFAST® herbicide is a water-dispersible granule used at the rate of 3/4 ounce per acre for selective postemergence grass and broadleaf weed control in field corn.

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

Do not make more than one application of STEADFAST® per cropping season.

Do not apply aerially in California or New York State.

#### WHEN TO APPLY

TIMING TO CROP STAGE

Apply STEADFAST® to corn that is up to 20 inches tall and exhibiting up to and including 6 leaf-collars. Do not apply to corn taller than 20 inches or exhibiting more than 6 leaf collars, whichever is more restrictive. Some State and corn hybrid restrictions apply (see below). Not all STEADFAST® tank mixtures may be applied to corn that is beyond 12" tall. Consult TANK MIX APPLICATIONS for more information.

While STEADFAST® has arwide application window research has shown best results are obtained when applications are made early postemergence when corn and weeds are small. Target applications to corn that is less than 12" tall for best overall performance.

Apply STEADFAST® to field corn hybrids with a relative maturity (RM) rating of 77 days or more, including "food grade" (yellow dent, hard endosperm), waxy and oil com. 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 STEADFAST® on these types of corn is the responsibility of the user. Consult with your seed supplier before applying STEADFAST® to any of these corn types. Applications of STEADFAST® to corn hybrids of 77-88 CRM should be limited to corn that is 12" tall, less than or equal to 5-leaf collars, whichever is most restrictive. In addition, the application of tank mixtures with dicamba-containing herbicides (such as "Clarity" or "Distinct") to 77-88 CRM corn should contain no more than 2 ounces a.i. dicamba (e.g. 4 ounces "Clarity"). 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 STEADFAST® 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 STEADFAST®.

Limit STEADFAST® applications to corn that is up to 12" tall, up to and including 5 leaf collars, whichever is most restrictive, in the states of KS, OK and TX.

#### TIMING TO WEEDS

Apply STEADFAST® when grasses are young and actively growing, but before they exceed the sizes listed on this label.

- Applications made to weeds at growth stages greater than those listed below may result in incomplete control.
   Grass competition due to incomplete control may reduce yields.
- Adequate soil moisture is required for optimum activity.
   Rainfall within 5 to 7 days after application will enhance STEADFAST® residual activity.

If an 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>TM</sup> ACCENT® herbicide, if needed. See CULTIVATION or SEQUENTIAL ACCENT® APPLICATIONS.

#### RATE

Apply DuPont<sup>™</sup> STEADFAST® at a rate of 3/4 ounce per acre for season-long control of grass and broadleaf weeds listed below.

#### WEEDS CONTROLLED

Grasses	Height (Inches) at Application
Barnyardgrass	4"
Canarygrass	6"
Cereals, volunteer	2"
Crabgrass, large*	ì"
Cupgrass, woolly*	3"
Foxtails	
bristly	4"
giant	4"
green	4"
yellow*	4"
Goosegrass	2"
Johnsongrass, seedling or rhizome	<u>8 -</u> 12"
Millet, wild proso	4"
Muhly, wirestern	4**
Panicum, fall & Texas	4"
Quackgrass	8"*
Ryegrass, Italian	4"
Sandbur, field*	2"
Shattercane	6"
Signalgrass, broadleaf	2"
Oats, wild	2"
Witchgrass	4"

<sup>\*</sup>Cultivation or retreatment with DuPont™ ACCENT® may be required. See "For Additional Control of Crabgrass and Later Emerging Grasses."

4" 4" 8" 4" 4"
4" 8" 4"
8" 4"
4"
4"
4"
4"
4"
4"
4"
4"
4"
4"
4"
4"
4"
2"

As weeds mature, their sensitivity to STEADFAST® decreases. Grassy weeds growing under stress due to drought or other environmental factors may become mature (more than 3 tillers) before they reach the size listed, in which case their susceptibility to STEADFAST® may be reduced.

#### SPRAY ADJUVANTS

Applications of STEADFAST® must include either a crop oil concentrate or a nonionic surfactant. In addition, an ammonium nitrogen fertilizer must be used unless specifically prohibited by tank mix partner labeling. Crop oil concentrate plus ammonium nitrogen fertilizer is the preferred adjuvant system for STEADFAST®. Consult local DuPont fact sheets, technical bulletins, and service policies prior to using other adjuvant systems. If another herbicide is tank mixed with STEADFAST®, select adjuvants authorized for use with both products. Products must contain only EPA-exempt ingredients (40 CFR 1001).

#### Petroleum Crop Oil Concentrate (COC) or Modified Seed Oil (MSO)

- 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 quart per 100 gallons spray solution) or 0.5% under arid conditions.
- Surfactant products must contain at least 60% nonionic surfactant with a hydrophilic/lipophilic balance (HLB) greater than 12.

#### Ammonium Nitrogen Fertilizer

- Use 2 quarts/acre of a high-quality urea ammonium nitrate (UAN), such as 28%N or 32%N, or 2 pounds/acre of a spray-grade ammonium sulfate (AMS). Use 4 quarts/acre UAN or 4 pounds/acre AMS under arid conditions.
- Do not use liquid nitrogen fertilizer as the total carrier solution.

#### Special Adjuvant Types

- Combination adjuvant products may be used at doses that provide the required amount of NIS, COC, MSO and/or ammonium nitrogen fertilizer. Consult product literature for use rates and restrictions.
- In addition to the adjuvants specified above, other
  adjuvant types may be used if they provide the same
  functionality and have been evaluated and approved by
  DuPont Product Management. Consult separate DuPont
  technical bulletins for detailed information before using
  adjuvant types not specified on this label.

#### MIXING INSTRUCTIONS

- 1. Fill the tank 1/4 to 1/3 full of water.
- While agitating, add the required amount of DuPont™ STEADFAST®.
- Continue agitation until the STEADFAST® is fully dispersed, at least 5 minutes.
- 4. Once the STEADFAST® is fully dispersed, maintain agitation and continue filling tank with water. Thoroughly mix STEADFAST® with water before adding any other material.
- 5. As the tank is filling, add the required spray adjuvants (crop oil concentrate, nonionic surfactant, or ammonium nitrogen fertilizer).
- If the mixture is not continuously agitated, settling will occur. If settling occurs, thoroughly re-agitate before using.
- 7. Apply STEADFAST® spray mixture within 24 hours of mixing to avoid product degradation.
- 8. If STEADFAST® and a tank mix partner are to be applied in multiple loads, pre-slurry the STEADFAST® in clean water prior to adding to the tank. This will prevent the tank mix partner from interfering with the dissolution of the STEADFAST®.

# WHEN TO APPLY - SEQUENTIAL APPLICATIONS FOLLOWING REDUCED RATES OF PREEMERGENCE HERBICIDES

STEADFAST® may be used as a sequential application in a planned postemergence weed control program in corn following a reduced rate of a preemergence herbicide.

Apply a reduced rate of a preemergence grass herbicide prior to corn emergence and then follow with a postemergence application of STEADFAST®. Apply products such as DuPont<sup>TM</sup> CINCH®, "Balance" PRO, "Axiom", "Dual" II Magnum, "Surpass", "Frontier" and "Harness" Xtra at as low as 1/4 to 1/2 of the full labeled use rate and follow with a sequential postemergence application of STEADFAST®. Refer to WHEN TO APPLY - POSTEMERGENCE and ENVIRON-MENTAL CONDITIONS AND BIOLOGICAL ACTIVITY sections for complete application information and precautions. Refer to the preemergence grass herbicide label for use restrictions, application information, rotational crop guidelines, and cautionary statements prior to applying STEADFAST®.

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

#### TANK MIX APPLICATIONS

Application of STEADFAST® tank mixtures containing atrazine and/or dicamba (in some states) are limited to corn that is up to 12" tall, up to and including 5 leaf collars, whichever is most restrictive. See TANK MIXTURES WITH "DISTINCT" OR DICAMBA for additional information. Refer to the table below for weeds controlled using preferred tank mixtures.

#### For Additional Control of Broadleaf Weeds

STEADFAST® may be tank mixed with the herbicides below for additional control of broadleaf weeds. See the tank mix partner label for weeds controlled, precautions, use restrictions and crop rotation information.

Crop oil concentrate must be used in the tank mixtures specified below. The use of nonionic surfactant is permitted in place of crop oil concentrate for tank mixtures containing dicamba, however, overall weed control may be reduced. See SPRAY ADJUVANTS for adjuvant rate recommendations.

	Rate/A
atrazine 90DF	4 - 35 oz
dicamba (e.g., "Clarity" - 4lb/gal dicamba)	2 - 4 fl oz
dicamba + atrazine (e.g. "Marksman" - 1.1 lb/gal dicamba)	8 - 16 fl oz
"Distinct"	1.0 - 2.0 oz
"Callisto"	1.5 - 3.0 fl oz
"Hornet" WDG	2.0 - 3.0 oz

Rates listed are for the specific products noted in the table. If other brands or formulations are used, rates of active ingredients should be adjusted to correspond to the products indicated. Formulations of products other than those listed may not have been tested with STEADFAST®. Check with the manufacturer for information on tank mix compatibility prior to using (see TANK MIX COMPATIBILITY TESTING).

The table below indicates weeds controlled using preferred tank mixtures.

Broadleaf Weeds	STEAD- FAST® Alone	+ 4 oz. "Clarity"	+ 2 oz. "Dis- tinct"	+ 1 pt "Marks- man"	+ 2.0 oz. "Hornet" WDG	+ 1/2 lb atra- zine	+2 oz "Call- isto"†
Cocklebur,							-
common	4"*	4"	4"	4"	4"	4"	4"
Dandelion	8"	10"	10"	10"	10"	10"	10"
Kochia		4"*	4"*	4"*			4"**
Ladysthumb	4***	4"*	4"*	4"*	4"	4"*	4"
Lambs- quarters, common	2"*	4"	4"	4"	2"*	4-	4"
Mallow, venice					4"		4"**
Nightshade, eastern black	:	2"	2"	4"	2"*	2"	4"
Ragweed, common		4"	4"	4"	4"	4"	4"**
Ragweed, giant		4"*	4**	4"*	4"	4"*	4-
Smartweed, PA	4**	4"	4"	4"	4"	4-	4"
Velvetleaf Waterhemp, common,	4"*	4"	4"	4"	4"	2"	4*
tall	2"*	2"	2"	4"	2"*	2"	4"

<sup>\*</sup>Suppression

Unless noted elsewhere in this label, all tank mixtures in the table above require the addition of crop oil concentrate and ammonium nitrogen fertilizer as noted in SPRAY ADJUVANTS.

Do not use MSO adjuvants when tank mixing STEADFAST® with >1.5 ounces "Callisto".

<sup>\*\*</sup>Requires the addition of 4 oz a.i. atrazine

<sup>†</sup>See "Callisto" tank mix chart on next page

# ADDITIONAL RECOMMENDATIONS AND/OR RECOMMENDATIONS FOR SPECIFIC WEED PROBLEMS

#### Tank Mixtures with Atrazine

DuPont<sup>TM</sup> STEADFAST® may be tank mixed with 1/4 - 2 pounds a.i. atrazine\* for additional control of many broadleaf weeds, including:

#### Weed height at application

Sicklepod	1 - 2 inches		
Prickly sida	1 - 2 inches		
Wild Radish	6 - 12 inches		
Cutleaf evening primrose	4 - 6 inches		
Florida pusley	1 - 2 inches		

\*For best results add 0.25 - 2.0 quarts atrazine 4L OR 4 - 35 ounces atrazine 90DF. Products containing atrazine are restricted use products.

STEADFAST® + atrazine tank mix may result in reduced control of grasses (antagonism) if applied to grasses under low moisture stress or to grasses exceeding the maximum labeled height. Before applying STEADFAST® + atrazine tank mix, refer to the atrazine product label for information regarding the maximum amount of atrazine that may be applied in a season.

#### Tank Mixtures with "Callisto"

STEADFAST® may be tank mixed with 1.5 - 3.0 fluid ounces/acre of "Callisto" herbicide for weed control as indicated in the table below:

#### Maximum Weed Height (in inches)

	"Callisto" alone		"Callisto" + atrazine*			
Species	1.5 oz	2.0 oz	3.0 oz	1.5 oz	2.0 oz	3.0 oz
Cocklebur	4"	4"	4"	10"	10"	10"
Dandelion	10"	10"	10"	10"	10"	10"
Jimsonweed	4"	4"	4"	4"	10''_	10"
Kochia			4"		4"	<u>4"</u>
Lambsquarters, common	4"	4"	4"	10"	10"	10"
Morningglory annual	4"	4"	4"	4"	4"	4"
Nightshade, black	4''	4"	4"	10"	10"	10"
Nightshade, eastern black	4"	4"	4"	10"	10"_	10"
Pigweed, palmer			4"	4"	4"	10"
Pigweed, redroot	4"	4"	4"	10"	10"	10"
Ragweed, common				4"	10"	10"
Ragweed, giant	<u></u>	3"	4"	4"	10"_	10"
Smartweed, ladysthumb		4"	4"	4"	10''	10"
Smartweed, Pennsylvania	4"	4"	4"	4"	10"	10"
Sunflower, common	4"	4"	4"	4"	4"	10"
Velvetleaf	4"	4"	4"	10"	10"	10"
Waterhemp,		4"	4"	4"	10"_	10"

<sup>\*</sup>Plus 0.25 to 0.75 pound a.i. atrazine per acre, may provide better control when weeds are at maximum height.

For improved grass and broadleaf weed control, STEADFAST® tank mixtures with 1.5 ounces "Callisto" (with or without atrazine) may be applied with 0.5 % v/v MSO spray adjuvant.

Do not use MSO adjuvants when tank mixing STEADFAST® with >1.5 ounces "Callisto". Use a petroleum-based crop oil concentration + an ammonium nitrogen fertilizer.

#### Tank Mixtures with "Distinct" or Dicamba

In situations where the use of crop oil concentrate with growth regulator herbicides is not desirable (e.g. extremely cold weather), STEADFAST® may be tank mixed with 2 ounces "Distinct" + a nonionic surfactant at 0.25% v/v (1 quart/100 gallons spray solution) in place of crop oil concentrate, but overall weed control may be reduced.

Tank mixture applications of STEADFAST® with herbicides containing dicamba (e.g. 1-2 ounces "Distinct" and 4 fluid ounces "Clarity") should be limited to corn that is up to 12" tall, up to and including 5 leaf collars, whichever is most restrictive, except for the states east of the line formed by the western borders of MI, IN, KY, TN, and MS, and except where noted in local DuPont Technical Bulletins. In these states the upper corn size limits are 20" tall, up to and including 6 leaf collars.

#### Tank Mixtures with "Exceed" or "Spirit"

STEADFAST® may be tank mixed with 0.5 ounces of "Spirit" or 0.125 ounces of "Exceed" herbicides for additional control of velvetleaf, common and giant ragweed, lambsquarters, ivyleaf morningglory, PA smartweed, and sunflower. Applications must be made to emerged field corn before the corn is 12" tall or is exhibiting 6 leaf collars, whichever is the more restrictive.

#### For Additional Control of Crabgrass and Later Emerging Grasses

STEADFAST® may be tank mixed with full or reduced rates of preemergence grass herbicides labeled for early postemergence application to field corn (such as DuPont™ CINCH®, "Prowl", "Surpass" EC, "Dual" II Magnum, and "Outlook") for increased residual activity of later-emerging flushes of grasses such as smooth and large crabgrass. Application must be made before the crabgrass emerges and before other grass weeds on the STEADFAST® label exceed their labeled sizes.

The use of nomionic surfactant is recommended in place of crop oil concentrate for tank mixtures with preemergence grass heroicides such as 'Prowl' DuPont' CINCH® and 'Lumax' where applications are made early postemergence to small weeds.

See SPRAY ADJUVANTS for adjuvant rate recommendations.

When tank mixing STEADFAST® with preemergence herbicides that restrict the use of ammonium nitrogen fertilizer adjuvants and applications are made early postemergence to small weeds, follow restrictions on the tank mix partner label and/or omit the fertilizer adjuvants.

Tank mix rates of "Lumax" herbicide should be limited to no more than 2 pints per acre.

When tank mixing DuPont STEADFAST® with EC formulated preemergence grass herbicides such as CINCH® Dual II Magnum, or Prowl, do not add Callisto, herbicide to the tank mixture. When other formulations of preemergence grass herbicides are tank mixed with STEADFAST® + "Callisto" (such as CINCH® AIZ or Bicep II Magnum, himit preemergence herbicide rates to no more than 2/3 x full preemergence rates, always add nomonic surfactant in place of crop oil concentrate, and limit broadleaf weed sizes to less than or equal to 4" tall

Tank mixes of STEADFAST® and preemergence grass herbicides must be broadcast applied postemergence to field corn before the crop exceeds the heights listed on the preemergence grass herbicide label. Refer to WHEN TO APPLY-POSTEMERGENCE and the preemergence grass herbicide label for complete postemergence application information, rates, and restrictions.

## For Additional Control of Palmer Pigweed (Amaranth) in the states of CO, KS and OK

DuPont<sup>TM</sup> STEADFAST® may be tank mixed with 2.0 - 3.0 ounces a.i./acre of dicamba (e.g. 4.0 - 6.0 fluid ounces/acre of "Clarity") and crop oil concentrate for additional control of palmer pigweed. Applications must be made to corn that is 4 - 8" tall and is exhibiting fewer than 4 leaf-collars.

#### For Additional Control of Yellow Nutsedge

STEADFAST® may be tank mixed with up to 0.66 ounce/acre "Permit" herbicide or up to 4 ounces "Yukon" herbicide for control of yellow nutsedge. Applications must be made before the corn exhibits 6 leaf collars or is 12" tall, whichever is the more restrictive. Consult the "Permit" or "Yukon" labels for additional weeds controlled. Always add COC and ammonium nitrogen fertilizer.

#### For Additional Control of Kochia

STEADFAST® 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.

#### Tank mixtures with insecticides

STEADFAST® may be tank mixed with pyrethroid or carbamate insecticides such as DuPont<sup>TM</sup> ASANA® XL or DuPont<sup>TM</sup> LANNATE® insecticides.

Its avoid crop injury or antagonism, apply the products indicated below at least seven days before or three days after the application of STEADFAST® with "Basagran" and Laidok or severe crop mjury may occur.

Do not tank mix STEADFAST® with 2.4-D containing products as severe grass control antagonism may occur.

Do not tank mix STEADFAST® with foliar applied organophosphate insecticides such as "Lorsban" malathion, parathon, etc. his severe crop injury may occur.

Do not tank mix STEADFAST® with foliar applied organophosphate insecticides such as "Lorsban" malathion, parathon, etc. his severe crop injury may occur.

Do not tank mix STEADFAST® with other acetolactate synthase (ALS) inhibiting herbicides unless the mixture is specifically recommended on STEADFAST® labels or fact sheets, as severe crop injury may occur.

Other than the exceptions noted, and in addition to the tank mix partners and rates indicated above, STEADFAST® may be tank mixed or followed with sequential applications of other products registered for use in field corn. STEADFAST® 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 STEADFAST®.
- The tank mixture is not specifically prohibited on the label of the tank mix product.
- The tank mix combination is compatible as determined by a "jar test" described in the TANK MIX COMPATIBILITY TESTING section below.

#### Tank Mixing Precautions:

- Weed control and crop response with tank mixtures not specifically recommended in this label 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.
- Do not exceed labeled application rates. Do not tank mix STEADFAST® with other products that contain the same active ingredients as STEADFAST® (nicosulfuron and rimsulfuron) unless the label of either tank mix partner specifies the maximum rate that may be used.
- 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.

#### TANK MIX COMPATIBILITY TESTING

Perform a jar test prior to tank mixing to ensure compatibility of STEADFAST® and other pesticides. Use a clear glass 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-up, forms flakes, sludges, gels, oily film or layers, or other precipitates, it is not compatible and the tank mix combination should not be used.

SEQUENTIAL DUPONT™ ACCENT® APPLICATIONS

Apply ACCENT® herbicide 14 or more days after DuPont<sup>TM</sup> STEADFAST® applications to control grasses that may emerge later in the season. Refer to the ACCENT® label for grass species controlled, proper size of weeds, rates, corn sizes, and other information. When following a STEADFAST® application, do not use more than 2/3 ounce ACCENT® per acre.

A sequential application of ACCENT® will effect crop rotation intervals to certain sensitive crops such as sugarbeets. For maximum crop rotation flexibility, consult the CROP ROTATION section before applying ACCENT® to fields previously treated with STEADFAST®.

#### **CULTIVATION**

A timely cultivation may be necessary to control suppressed weeds, or weeds that emerge after an application of STEADFAST® in the absence of an activating rainfall.

Optimum timing for cultivation is 7-14 days after STEADFAST® application or upon seeing the establishment of new weeds.

## ENVIRONMENTAL CONDITIONS AND BIOLOGICAL ACTIVITY

STEADFAST® provides best results when applied to young, actively growing weeds. Applications made during warm, moist conditions (70°F or more) and adequate soil moisture both before and after application maximizes performance.

The degree and duration of control depend on spray coverage, activating rainfall, weed spectrum, weed size, growing conditions before and after treatment, soil moisture, and adjuvant selection.

Adequate soil moisture is required for optimum activity. Rainfall within 5-7 days will enhance STEADFAST® residual activity. A timely cultivation may be required for maximum weed control without an activating rain.

STEADFAST® is rainfast in 4 hours.

Treating weeds that exceed maximum label height or that are under stress may result in incomplete control. Poor weed control or crop injury may result from applications made to plants under stress from:

- · abnormally hot or cold weather
- environmental conditions such as drought, water-saturated soils, hail damage, or frost
- · disease, insect, or nematode injury
- prior herbicide, or carryover from a previous year's herbicide application

Severe stress from conditions immediately following application may also result in crop injury or poor weed control. Stress affects all weeds, but especially weeds such as woolly cupgrass, green and yellow foxtail, and wild proso millet. If the corn or grass weeds are under stress, delay application until stress passes and both weeds and corn resume active growth.

Apply STEADFAST® when minimum nighttime temperatures are above 40°F and the maximum daytime temperatures are below 92°F to maximize performance and minimize the potential for crop injury.

Applications made during or immediately following periods of large day/night temperature fluctuations or where daytime temperatures do not exceed 50°F may decrease weed control and increase the potential for crop injury.

STEADFAST® rapidly inhibits the growth of susceptible weeds, reducing weed competition within as little as 6 hours after application. Susceptible plants are controlled in 7–21 days. Ground application of STEADFAST® to dry, dusty fields may

## SOIL INSECTICIDE INTERACTION INFORMATION

reduce weed control in wheel track areas.

Before using STEADFAST®, ensure that it is compatible with any other insecticides previously applied to the corn crop.

STEADFAST® 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.

STEADFAST® may be applied to corn previously treated with "Fortress", "Aztec", or "Force" insecticides or non-organophosphate (OP) soil insecticides regardless of soil type.

- •DO NOT APPLY STEADFAST® to corn previously treated with "Counter" 15G or to corn treated with "Counter" 20CR infurrow or over the row at cultivation.
- Applications of STEADFAST® 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.

#### **CROP ROTATION**

Rotational crops vary in their response to low concentrations of STEADFAST® remaining in the soil. STEADFAST® dissipates rapidly in warm, acidic, microbiologically active soils.

The amount of STEADFAST® which may be present in the soil depends on soil pH and organic matter content, elapsed time since application, crop production practices, and environmental factors.

Injury to rotational crops may occur in high-pH, cold soils if dry weather prevails between application and rotational crop planting.

For fields treated with sequential applications of STEADFAST® and DuPont™ ACCENT® herbicide, consult the crop rotation intervals listed on the ACCENT® and STEADFAST® labels. Use the most restrictive recrop interval from either label.

The following rotational intervals must be observed when using STEADFAST®:

### DUPONT™ STEADFAST® ROTATIONAL CROP GUIDELINE - 1

No soil pH restrictions

Crop Rotational	Interval in Months
Com (field)	Anytime
Corn (pop, sweet, seed)*	10
Soybeans	0.5 (15 days)
Cereals, spring (barley, oats, rye, wheat)	8
Cereals, winter (barley, oats, rye, wheat)	4
Canola**	10
Cotton	10
Dry Beans, Peas, Snap Beans	10
Alfalfa**†	10
Flax**	10
Red Clover**	10
Potato**	10
Sunflower**	10
Other Crops	See Rotational Crop Guideline 2

- Except the sweet corn varieties "Merit", "Carnival", and "Sweet Success", for which the minimum time interval is 15 months.
- \*\*Rotational 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.
- † 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.

#### STEADFAST® ROTATIONAL CROP GUIDELINE - 2

Crops With soil pH restrictions

		Rotational Interval in Months		
Crop	Soil pH - < 6.5	6.5 - 7.5	> 7.5	
Sorghum	10	10	18*	
Sugarbeets***	10	18**	18	
All other crops	10	18	18	

- Except in Texas and Oklahoma east of Highway 281, where the rotational interval is 10 months, regardless of pH.
- \*\* Except on irrigated sites in Colorado, Wyoming, Nebraska, Texas, or in Minnesota east and south of the Red River Valley, Michigan, and Ohio, where precipitation and/or irrigation following application must exceed 25" prior to planting beets, where the interval is 10 months on soils with pH < 7.5. In the States of Colorado, Wyoming, and Nebraska, temporary crop response, stunting and/or crop injury may occur if soil pH is > 7.5, or precipitation and/or irrigation following application is less than 25" prior to planting sugarbeets.
- \*\*\*In North Dakota and northwest Minnesota, the cumulative precipitation and/or irrigation following in the 18 months following application must exceed 28" in order to rotate to sugarbeets.

#### APPLICATION INFORMATION

Many crops are highly sensitive to STEADFAST®. All direct or indirect contact (such as spray drift) with crops other than field corn should be avoided (see also SPRAY DRIFT MANAGEMENT).

For all application systems, use 50-mesh or larger strainer screens.

Do not apply STEADFAST® through any type of irrigation system.

#### GROUND APPLICATION

#### 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.

#### **Band Application**

For band applications, use proportionately less spray mixture. To avoid crop injury, carefully calibrate the band applicator to not exceed the labeled rate. Carefully follow the manufacturer's instructions for nozzle type (flat fans), orientation, distance of nozzles from the crop and weeds, spray volumes, calibration and spray pressure.

#### **AERIAL APPLICATION**

Aerial application is not permitted in New York State or California.

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 off-target spray movement.

#### SPRAYER PREPARATION/CLEANUP

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

#### Note:

- When cleaning spray equipment before applying STEADFAST®, read and follow label directions for proper rinsate disposal of the product previously sprayed.
- Steam cleaning of aerial spray tanks will help to dislodge any visible pesticide deposits.
- When spraying or mixing equipment will be used over an extended period to apply multiple loads of STEADFAST®, 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 gallon of household ammonia\* (containing 3% active) for every 100 gallons 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 lowdrift nozzles.

#### Controlling Droplet Size - Aircraft

- Number of Nozzles Use the minimum number of nozzles with the highest flow rate that provide uniform coverage.
- Nozzle Orientation Orienting nozzles so that the spray is emitted backwards, parallel to the airstream will produce larger droplets than other orientations.

- Nozzle Type Solid stream nozzles (such as disc and core with swirl plate removed) oriented straight back produce larger droplets than other nozzle types.
- Boom Length The boom length should not exceed 3/4
  of the wing or rotor length longer booms increase drift
  potential.
- Application Height Application more than 10 ft above the canopy increases the potential for spray drift.

#### **BOOM HEIGHT**

Setting the boom at the lowest labeled height (if specified) which provides uniform coverage 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 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.

#### 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.

#### IMPORTANT PRECAUTIONS

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

- Do not apply DuPont<sup>TM</sup> STEADFAST® 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 of spray to desirable plants.
- · Do not contaminate any body of water.
- Thoroughly clean application equipment immediately after use. (See the Sprayer Cleanup section of this label for instructions.)

 Do not graze or feed forage, hay, or straw from treated areas to livestock within 30 days of STEADFAST® application.

#### STORAGE AND DISPOSAL

**Pesticide Storage:** Store product in original container only. Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Store in a cool, dry place.

Pesticide Disposal: Do not contaminate water, food, or feed by disposal. Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal: For Plastic Containers: Triple rinse (or equivalent) the container. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke. For Fiber Sacks: Completely empty fiber sack by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Dispose of bags at an approved waste disposal facility, in accordance with Federal, state and local regulations. For Fiber Drums With Liners: Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Then dispose of liner in a sanitary landfill or by incineration if allowed by state and local authorities. If drum is contaminated and cannot be reused, dispose of in the same manner. For Bags Containing Water Soluble Packets: Do not reuse the outer box or the resealable plastic bag. When all water-soluble packets are used, the outer packaging should be clean and may be disposed of in a sanitary landfill or by incineration, or if allowed by state and local authorities, by open burning. If burned, stay out of smoke. If the resealable plastic bag contacts the formulated product in any way, the bag must be triple-rinsed with clean water. Add the rinsate to the spray tank and dispose of the outer wrap as described above. For Metal Containers (non aerosol): Triple rinse (or equivalent) the container. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

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