

## INCORPORATION INSTRUCTIONS

PENTAGON DG must be thoroughly and uniformly incorporated into the soil with either (a) mechanical incorporation equipment as outlined below, or (b) with rainfall or irrigation, if rainfall or irrigation is adequate for good crop and weed emergence and received within 7 days after application. If rainfall or irrigation is not obtained, PENTAGON DG should be mechanically incorporated.

### Mechanical Incorporation

PENTAGON DG should be applied to loosened beds and incorporated into the top 1 to 2 inches of soil within 7 days after application. Ratoon sugarcane must be lightly shaved in early spring to remove the old stubble before incorporation over the line of sugarcane is possible. Carefully adjust equipment to incorporate without causing excessive damage to emerging shoots. Mechanical incorporation can be achieved by the following:

- a. Rolling cultivator (Lilliston type - Lely Roterra<sup>1</sup>) set to cut 2 or 3 inches deep and operated two times at 6 to 8 mph. This technique may be used with all application timings.
- b. Rolling disc cultivator (Hipper) set to cut 2 to 3 inches deep and operated two times at 6 to 8 mph. This technique may be used to incorporate between sugarcane lines (rows) at layby only.

<sup>1</sup> Lely Roterra is a trademark of Lely.

<b>PENTAGON DG Tank Mixes</b>
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PENTAGON DG may be used in combination with any registered herbicide. Consult labels for all directions, precautions and restrictions. Always check compatibility when applying in a tank mix and follow the most restrictive label.

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## **SUGARCANE** **for use in Hawaii**

### **GENERAL INSTRUCTIONS**

PENTAGON DG may be applied preemergence through layby in plant or ratoon sugarcane.

DO NOT apply through irrigation systems on sugarcane.

DO NOT make aerial applications at close-in because complete and uniform coverage cannot be obtained.

DO NOT apply more than 10 pounds per acre of PENTAGON DG during one growing season.

PENTAGON DG is not recommended for use on peat or muck soils.

DO NOT apply within 90 days of harvest.

DO NOT graze treated fields or feed treated forage or fodder to livestock.

### **Use Methods and Timings**

PENTAGON DG may be applied twice per season, preemergence through layby, in plant or ratoon sugarcane. Applications may be made band or broadcast. Although there may be adequate crop tolerance for postemergence applications at layby, the spray must be directed under the sugarcane canopy in order to obtain effective weed control.

### **PENTAGON DG Use Rates**

#### **Broadcast Rate of PENTAGON DG for Sugarcane Grown in Hawaii**

Apply 3.3 to 6.7 pounds per acre of PENTAGON DG but **DO NOT** exceed 10 pounds per acre in one growing season. See spraying instructions for calculation of band treatment rate.

Use the higher rates:

- a. for dark clay soils;
- b. if no mechanical incorporation is planned;
- c. if heavy weed populations are anticipated;
- d. or if no shaving is planned.

### **PENTAGON DG Tank Mixes**

PENTAGON DG may be used in combination with any registered herbicide. Consult labels for all directions, precautions and restrictions. Always check compatibility when applying in a tank mix and follow the most restrictive label.

# SUNFLOWERS

## GENERAL INSTRUCTIONS

PENTAGON DG may be applied preplant incorporated in the spring in sunflowers in all states.

PENTAGON DG alone may be applied preplant incorporated in the fall in sunflowers in the states of North Dakota, South Dakota, and Minnesota only.

PENTAGON DG plus Eptam tank mixture may be applied preplant incorporated in the fall in sunflowers in the states of North Dakota and Minnesota only.

PENTAGON DG may be applied as preplant surface or preemergence application in no-till sunflowers in the states of Colorado, Kansas, Minnesota, Nebraska, and North and South Dakota.

In the event of a crop loss due to weather conditions, sunflowers or any crop registered for PENTAGON DG preplant incorporated use can be replanted without adverse effects the same year. If replanting is necessary, DO NOT rework the soil deeper than the treated zone.

DO NOT feed forage or graze livestock in treated sunflower fields.

PENTAGON DG is not recommended for use on peat or muck soils.

## Use Methods and Timings

**Preplant Incorporated (Spring)** - Apply PENTAGON DG up to 60 days prior to planting and incorporate within 7 days of application.

**Preplant Incorporated (Fall)** - Apply PENTAGON DG or PENTAGON DG plus Eptam and immediately incorporate in late fall prior to planting sunflowers the following spring. Refer to **Incorporation Instructions** section (see table of contents for page number) for incorporation directions and the Eptam label for incorporation instructions. Destroy existing weeds before applying PENTAGON DG or PENTAGON DG tank mixture. The soil should be dry enough to permit good incorporation.

DO NOT apply PENTAGON DG plus Eptam tank mixture by air.

Apply PENTAGON DG or PENTAGON DG plus EPTAM tank mixture in the late fall when soil temperatures are 45°F or below but before the ground freezes. DO NOT apply when the air temperature is below 45°F.

Prior to sunflower planting in the spring, fields treated with PENTAGON DG or PENTAGON DG plus Eptam 7E should receive at least one shallow additional incorporation. Spring incorporation should be at an angle to the last tillage operation.

**PENTAGON DG Use Rates in Sunflowers**

Recommended use rates for PENTAGON DG are given in the following tables.

**Broadcast Rate per Acre of PENTAGON DG  
for Spring Preplant Incorporated in Sunflowers  
(Pounds per Acre)**

Soil Texture	Southern States <sup>1</sup>		Northern States <sup>1</sup>	
		<3% Organic Matter	> 3 % Organic Matter	
Coarse	0.85 to 1.25 lbs	0.85 to 1.7 lbs	1.7 lbs	
Medium	1.25 to 1.7 lbs	1.25 to 2.1 lbs	2.1 to 2.5 lbs	
Fine	1.25 to 2.5 lbs	1.7 to 2.5 lbs	2.5 lbs	

<sup>1</sup> See map at the end of this label for specific states.

Use the 2.5 pounds rate for heavy clay soils.

**Broadcast Rate per Acre of PENTAGON DG  
for Fall Preplant Incorporated Application  
in Sunflowers<sup>1</sup>  
(Pounds per Acre)**

Soil Texture	< 3% Organic Matter	> 3% Organic Matter
Coarse	1.25 to 2.1 lbs	2.1 lbs
Medium	1.7 to 2.5 lbs	2.5 to 2.9 lbs
Fine	2.1 to 2.9 lbs	2.9 lbs

<sup>1</sup> For use in North Dakota, South Dakota and Minnesota only

Use the high rate for each soil texture if heavy weed pressure is anticipated.

**Broadcast Rate per Acre of PENTAGON DG (pounds) Plus Eptam 7E (pints)  
for Fall Preplant Incorporated Tank Mixture  
Application in Sunflowers<sup>1</sup>  
(Pounds per Acre)**

**PENTAGON DG plus Eptam 7E**

Soil Texture	< 3% Organic Matter	> 3% Organic Matter
Coarse	0.85 to 1.7 + 2.25	1.7 + 2.25
Medium	1.7 to 2.1 + 2.25	2.1 to 2.5 + 2.25
Fine	1.7 to 2.5 + 2.25	2.5 + 2.25

<sup>1</sup> For use in North Dakota and Minnesota only.

Use the high rate for each soil texture if heavy weed pressure is anticipated.

Read and strictly follow all precautions and instructions on the Eptam label.

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<b>No-Till Sunflowers</b> <b>for use in Colorado, Kansas, Minnesota, Nebraska, and North and South Dakota</b>
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PENTAGON DG may be applied immediately after planting, or up to 30 days before planting. DO NOT apply PENTAGON DG postemergence since sunflowers exposed at the time of application will be killed. PENTAGON DG is most effective in controlling weeds when adequate rainfall or irrigation is received within 7 days after application. Otherwise, a registered postemergence grass herbicide treatment may be required.

Uniformly apply PENTAGON DG alone or in combination with other herbicides registered for gallonage for fields with history of heavy weed infestations or if the field has excessive crop residues.

Existing living vegetation must be controlled at or before the application of PENTAGON DG. A registered contact herbicide for use in sunflowers may be applied sequentially or in a tank mix with PENTAGON DG. Consult the contact herbicide label for all directions, precautions and restrictions.

**Broadcast Rate per Acre of PENTAGON DG**  
**Applied Preplant Surface or Preemergence**  
**in No-Till Sunflowers**  
**(Pounds per Acre)**

Soil Texture	< 3% Organic Matter	> 3% Organic Matter
Coarse	2.1 to 2.5 lbs	2.5 lbs
Medium	2.5 lbs	2.5 lbs
Fine	2.5 lbs	DO NOT USE

Note: DO NOT plant no-till wheat the fall following a no-till application in sunflowers.

# TOBACCO

## GENERAL INSTRUCTIONS

PENTAGON DG may be applied preplant incorporated or as a layby application in transplanted tobacco.

In the event of a crop loss due to weather conditions, transplanted tobacco or any crop registered for PENTAGON DG preplant incorporated use can be replanted without adverse effects the same year. If replanting is necessary, DO NOT rework the soil deeper than the treated zone.

PENTAGON DG is not recommended for use on peat or muck soils.

## Use Methods and Timings

**Preplant Incorporated** - Apply PENTAGON DG with ground sprayer up to 60 days prior to transplanting tobacco and incorporate within 7 days of application.

Applied according to directions and under normal growing conditions, PENTAGON DG will not harm transplanted tobacco. Under stress conditions for plant growth such as cold/wet or hot/dry weather, PENTAGON DG can produce a temporary retardation of tobacco development.

**Layby** - PENTAGON DG may be applied as a directed spray following the last normal cultivation (layby), usually 4 to 6 weeks after transplanting tobacco. Apply PENTAGON DG in a 16 to 24-inch band in the middle of the row between the crop rows. The spray should not contact tobacco plants. If the spray nozzles on the ends of the spray boom pass over the same row middle twice, use nozzles which apply one-half (1/2) the normal number of gallons per acre to prevent over-application.

Layby applications can be applied in tobacco previously treated with herbicides registered for use in tobacco. Consult the labels of those herbicides for suggested treatments, rates to be used, and precautions or restrictions for use in tobacco and for follow crop restrictions.

PENTAGON DG is most effective in controlling weeds when adequate rainfall or irrigation is received within 7 days after application.

PENTAGON DG will not control established weeds. DESTROY EMERGED WEEDS PRIOR TO APPLICATION.

DO NOT APPLY AS A BROADCAST SPRAY OVER TOP OF TOBACCO LEAF. CONTACT MAY CAUSE MALFORMED LEAVES.

**PENTAGON DG Use Rates in Transplanted Tobacco**

Recommended use rates for PENTAGON DG alone is given in the following table.

**Broadcast Rate<sup>1</sup> per Acre of PENTAGON DG Preplant Incorporated in Transplanted Tobacco (Pounds per Acre)**

REGION	SOIL TEXTURE	PENTAGON DG (pounds)
Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida	COARSE	1.25 to 1.7
	MEDIUM	
	sandy clay loams, loams	1.25 to 1.7
	silt loams, silts	1.7 to 2.1
Other tobacco-growing states	FINE	1.7 to 2.1
	COARSE	1.25 to 1.7
	MEDIUM	2.1 to 2.5
	FINE	2.1 to 2.5

**Broadcast Rate<sup>1</sup> per Acre of PENTAGON DG Layby Application in Transplanted Tobacco (Pounds per Acre)**

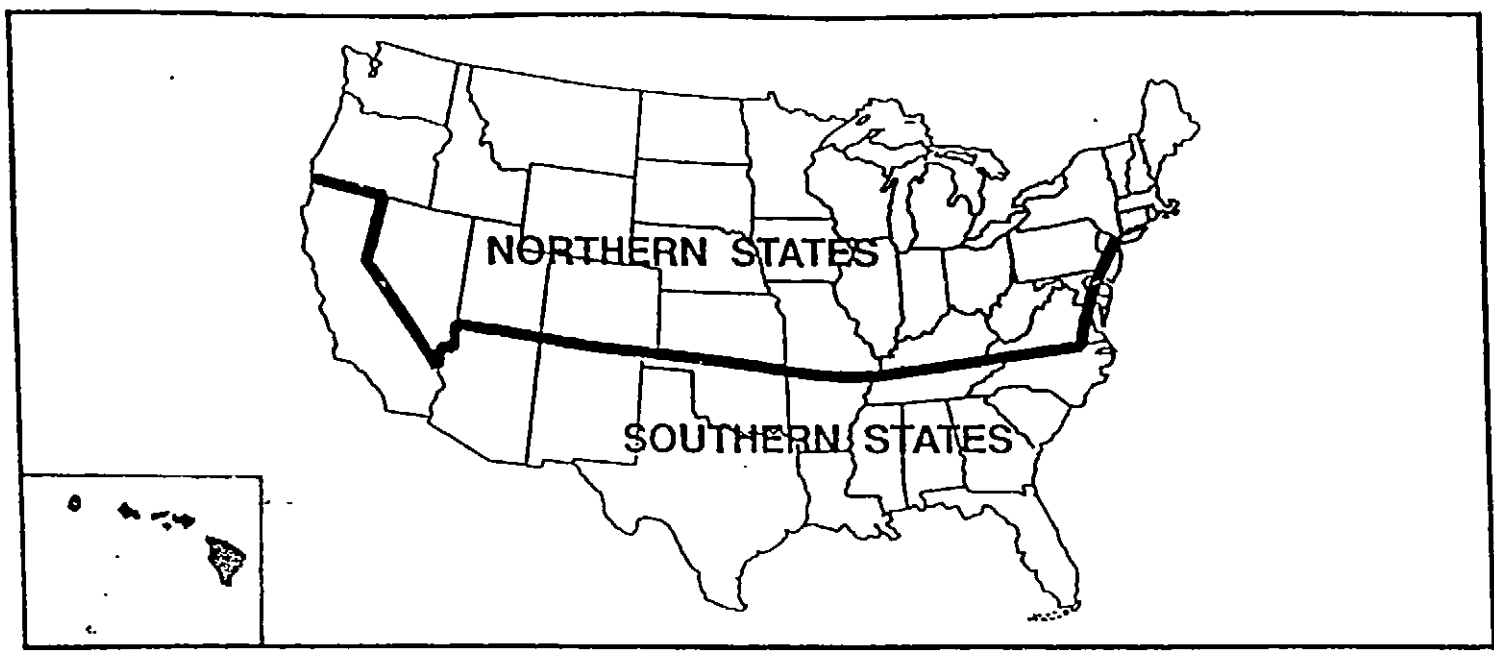
Soil Texture	Rate <sup>2</sup>
Coarse	0.85 to 1.25 lbs
Medium	1.25 to 1.7 lbs
Fine	1.25 to 1.7 lbs

<sup>1</sup> For calculation of band treatment rate, see Spraying Instructions section (see table of contents for page number).

<sup>2</sup> The high rate for each soil texture above should be used if a registered herbicide treatment was not applied prior to layby.

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# REGIONAL MAP FOR RATE DETERMINATION



 **CYANAMID**  
American Cyanamid Company  
Agricultural Products Division  
Crop Protection Chemicals Department  
Wayne, NJ 07470 ©1995



JUL 18 1995

Dr. Zareen Ahmed  
American Cyanamid Co.  
P.O. Box 400  
Princeton, NJ 08543

Dear Dr. Ahmed:

Subject: Minor Changes  
PENTAGON® DG Herbicide  
EPA Reg. No. 241-268  
Your submission dated July 23, 1995

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is acceptable and a stamped copy is enclosed for your records.

Sincerely yours,

Robert J. Taylor  
Product Manager 25  
Fungicide-Herbicide Branch  
Registration Division (H7505C)

Enclosure

CONCURRENCES

SYMBOL							
SURNAME							
DATE							

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# PENTAGON™ DG herbicide

**FOR USE IN SELECTED CROPS**

**ACTIVE INGREDIENT:**  
 pendimethalin (N-(1-ethylpropyl)-3,4-dimethyl-2,6-dinitrobenzenamine).....60.0%

**INERT INGREDIENTS**.....40.0%

**TOTAL**.....100.0%

(10 pounds contains 6 pounds of pendimethalin)

EPA Reg. No. 241-268

EPA Est. No.

**KEEP OUT OF REACH OF CHILDREN**

**CAUTION!/PRECAUCION!**

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).

In case of an emergency endangering life or property involving this product, call collect, day or night, Area Code 201-835-3100.

**See Directions For Use Inside Booklet**  
**See Additional Precautionary Statements Inside Booklet**

**CYANAMID Logo**

**American Cyanamid Company**  
 Agricultural Products Division  
 Crop Protection Chemical Department  
 Wayne, NJ 07470 ©1995

**ACCEPTED**  
**COMMENTS**  
**EPA Ester Dated:**

JUL 18 1995

Net Contents:

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Under the Federal Insecticide,  
 Fungicide, and Rodenticide Act  
 as amended, for the pesticide  
 registered under EPA reg. No.  
241-268

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**Footnotes to Table of Contents**

- 1 Accent SP, Bladex, Extrazine II, Karmex, Lorox, Lorox Plus, Lexone, Canopy and Preview are trademarks of E.I. du Pont de Nemours and Company.
- 2 Beacon, Bicep, Bicep II, Dual, Dual II, Cotoran, and Caparol are trademarks of Ciba Corporation.
- 3 Banvel, Frontier, Guardsman, Marksman, and Zorial are trademarks of Sandoz Crop Protection Inc.
- 4 Bucril is a trademark of Rhone-Poulenc Ag Company
- 5 Harness, Lariat, Bullet, Lasso, Micro-Tech, and Partner WDG are trademarks of Monsanto Agricultural Products Company.
- 6 Surpass, Surpass 100, Eptam, Vernam, and Arrosolo are trademarks of Zeneca Inc.
- 7 Sencor is a trademark of Miles Inc.
- 8 Facet 75 DF is a trademark of BASF Corporation.
- 9 Command is a trademark of FMC Corporation.

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**PENTAGON™ DG herbicide**

**FOR USE IN COTTON, DRY BULB ONIONS, DRY BULB SHALLOTS,  
EDIBLE BEANS, FIELD CORN, FORAGE LEGUMES, GARLIC,  
GRAIN SORGHUM, NONBEARING FRUIT, NUT CROPS  
AND VINEYARDS; PEANUTS, POTATOES, RICE, SOYBEANS,  
SUGARCANE, SUNFLOWERS, SWEET CORN,  
SWEET LUPINES, AND TOBACCO**

PENTAGON DG SHOULD BE USED IN ACCORDANCE WITH THE DIRECTIONS IN THIS BOOKLET AND IN SUPPLEMENTAL LABELS, FOR REGISTERED USES NOT INCLUDED IN THIS BOOKLET, AVAILABLE THROUGH LOCAL AGRICENTER™ DEALERS. READ ALL DIRECTIONS CAREFULLY BEFORE USING.

Read all information on pages 6-22 before referring to specific crop use

**FOR CONTROL OF MOST ANNUAL GRASSES AND  
CERTAIN BROADLEAF WEEDS**

**FIRST AID**

If in eyes, flush eyes with plenty of water. Call a physician if irritation persists.

If on skin, wash with plenty of soap and water. Get medical attention if irritation persists.

**PRECAUTIONARY STATEMENTS**

**HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

**CAUTION!**

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

**Personal Protective Equipment (PPE):**

**Applicators and other handlers must wear:**

- \* Long-sleeved shirt and long pants
- \* Waterproof gloves
- \* 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.

**ENVIRONMENTAL HAZARDS**

This product is toxic to fish. **DO NOT** apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent aquatic sites. **DO NOT** contaminate water when disposing of equipment washwaters.

**DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. This label must be in the possession of the user at the time of pesticide application.

Observe all cautions and limitations in this label and the labels of products used in combination with PENTAGON DG. The use of PENTAGON DG not consistent with this label can result in injury to crops, animals, or persons. Keep containers closed to avoid spills and contamination.

**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 12 hours.

Exception: if the product is soil-injected or soil-incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

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
- \* Waterproof gloves
- \* Shoes plus socks

**STORAGE AND DISPOSAL**

DO NOT contaminate water, food, or feed by storage or disposal.

**STORAGE:**

DO NOT STORE ABOVE 125°F. Store in original containers and keep closed. Store in a cool, dry place.

In case of spills, either collect for use or dispose of properly.

**PESTICIDE DISPOSAL:**

Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

**CONTAINER DISPOSAL:**

For Five Gallons and Under: Triple rinse (or equivalent). 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 Bulk and Mini-Bulk: Return empty container to point of purchase for repackaging or recycling.

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For Bag: Completely empty contents of bag into application equipment. Then dispose of empty bag in a sanitary landfill, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**DISCLAIMER**

The label instructions for the use of this product reflect the opinion of experts based on research and field use. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, herbicide resistant weed populations, or the use of, or application of the product contrary to label instructions, all of which are beyond the control of American Cyanamid Company. All such risks shall be assumed by the user.

American Cyanamid shall not be responsible for losses or damages resulting from use of this product in any manner not set forth on this label. User assumes all risks associated with the use of this product in any manner not specifically set forth on this label.

American Cyanamid Company warrants only that the material contained herein conforms to the chemical description on the label and is reasonably fit for the use therein described when used in accordance with the directions for use, subject to the risks referred to above. CYANAMID DOES NOT MAKE OR AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE ANY OTHER WARRANTIES, EXPRESS OR IMPLIED AND EXPRESSLY EXCLUDES AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

BUYER'S EXCLUSIVE REMEDY AND AMERICAN CYANAMID'S EXCLUSIVE LIABILITY, WHETHER IN CONTRACT, TORT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE, SHALL BE LIMITED TO REPAYMENT OF THE PURCHASE PRICE OF PENTAGON DG. In no case shall Cyanamid or the seller be liable for consequential, special or indirect damages resulting from the use or handling of this product.

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### Uses with Other Products (Tank Mixes)

If this product is used in combination with any other product except as specifically recommended in writing by AMERICAN CYANAMID COMPANY, then AMERICAN CYANAMID COMPANY shall have no liability for any loss, damage or injury arising out of its use in any such combination not so specifically recommended. If used in combination recommended by AMERICAN CYANAMID COMPANY, the liability of AMERICAN CYANAMID COMPANY shall in no manner extend to any damage, loss or injury not directly caused by the inclusion of the AMERICAN CYANAMID COMPANY product in such combination use, and in any event shall be limited to return of the amount of the purchase price of the product.

### GENERAL INFORMATION

#### Special Precautions

PENTAGON DG herbicide controls most annual grasses and certain broadleaf weeds as they germinate, but it will not control established weeds. Destroy existing weeds before applying PENTAGON DG (except as recommended in specific postemergence combination treatments). Unusually cold, excessively wet, or hot and dry conditions that delay germination or extend germination over a long period of time can reduce weed control.

Applied according to label directions and under normal growing conditions, PENTAGON DG or PENTAGON DG tank-mix combinations will not cause crop injury. Over-application can result in crop stand loss, crop injury, or soil residues.

Uneven application or improper soil incorporation can decrease weed control or cause crop injury. Soil incorporation deeper than recommended can reduce weed control.

Seedling diseases, cold weather, excessive moisture, shallow or deep planting, low or high soil pH, high soil salt concentration, or drought can weaken seedlings and plants and increase the possibility of crop damage from PENTAGON DG. Under these conditions, crop yields can be reduced.

Use of PENTAGON DG herbicide in accordance with label directions is expected to result in normal growth of rotational crops in most situations; however, various environmental and agronomic factors make it impossible to eliminate all risks associated with the use of this product and, therefore, rotational crop injury is always possible.

Following the use of this product and chemically related products with the same mode of action, naturally occurring biotypes\* of some weeds listed in this label cannot be effectively controlled by this and related products. This product should be tank-mixed or applied sequentially with an appropriate registered herbicide having a different mode of action to ensure control of resistant biotypes.

\*A weed biotype is a naturally occurring individual within a given species that has a slightly different, but distinct genetic makeup from other individuals.

See your Cyanamid representative for additional information.

**MIXING INSTRUCTIONS**

- 1. Fill tank one-half to three-quarters full with clean water or liquid fertilizer and agitate. Sparge bar or jet spray agitation systems are recommended for DG applications. Prior to mixing PENTAGON DG or PENTAGON DG tank mixtures in liquid fertilizer, refer to appropriate label sections (see table of contents for page number) for recommended uses in liquid fertilizer, application instructions, and compatibility determinations.

ALWAYS PRE-SLURRY PENTAGON DG IN CLEAN WATER AT A CONCENTRATION OF UP TO 3 POUNDS PER GALLON OF WATER PRIOR TO ADDING TO LIQUID FERTILIZER SOLUTIONS.

**2. PENTAGON DG Alone**

When using PENTAGON DG alone, add PENTAGON DG to the partially-filled tank while agitating and then fill the remainder of the tank with water or liquid fertilizer. From the time of addition of PENTAGON DG, complete mixing will take approximately 5 minutes.

**3. PENTAGON DG Tank Mixtures**

Add PENTAGON DG to the partially filled tank while agitating. When PENTAGON DG is completely mixed (approximately 5 minutes) add the tank mixture ingredients in the order listed below. (For tank mixtures with Butyrac 200, Gramoxone Extra or Roundup see mixing instructions at the end of this section.)

Note: When using Beacon, Buctril, Karmex, Dual, Dual II, Stam, Surpass, Vernam, 2,4-D or PROWL 3.3 EC herbicide in a tank mixture with PENTAGON DG, add the other product to the tank first and mix thoroughly. Then add the PENTAGON DG to the tank solution.

- (a) **Wettable powder formulations**  
Make a slurry of the wettable powder in water (1 part WP + 2 parts water). Add the slurry slowly into the partially-filled tank while agitating. If tank mixing more than one wettable powder formulation, add the first one while agitating. Continue agitation and add second wettable powder only after complete mixing of the first wettable powder has occurred.
- (b) **Dry flowable/water dispersible granule formulations**  
Add the granules to the partially-filled tank while agitating. Make a slurry of the granules in water before adding to liquid fertilizer.
- (c) **Flowable formulations**  
Add the flowable to the partially-filled tank while agitating.
- (d) **Water soluble concentrate formulations**  
Add the water soluble concentrate to the partially-filled tank while agitating.
- (e) **Emulsifiable concentrate formulations**  
Add the emulsifiable concentrate to the partially-filled tank while agitating.

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- (f) **NOTE: For tank mixes including Butyrac, Gramoxone Extra or Roundup**  
After complete mixing of PENTAGON DG, continue filling the sprayer with water and add Butyrac or Gramoxone Extra or Roundup near the end of the filling process.

If Gramoxone Extra is included in the tank mixture, add 8 oz. of Ortho X-77 spreader or similar non-ionic surfactant per 100 gallons of total spray mixture as the last ingredient in the tank.

Fill the remainder of the tank with water or liquid fertilizer while agitating.

4. **MAINTAIN CONTINUOUS AGITATION WHILE ADDING HERBICIDES AND UNTIL SPRAYING IS COMPLETED.** If the spray mixture is allowed to settle for any period of time, thorough agitation is essential to resuspend the mixture before spraying is resumed. Continue agitation while spraying.

#### GENERAL APPLICATION INSTRUCTIONS

Uniformly apply recommended PENTAGON DG or PENTAGON DG tank mixture treatments in 10 or more gallons of water or 20 or more gallons of liquid fertilizer per acre with ground equipment. Use higher gallonage for fields with heavy weed infestations or excessive crop residues. Refer to Applications with Liquid Fertilizers section (see table of contents for page number) for liquid fertilizer recommended uses, application instructions and compatibility determinations. Apply in 5 or more gallons of water per acre with aircraft. Refer to Spraying Instructions section (see table of contents for page number) for spraying directions.

#### RATES

Follow all recommendations in specific crop sections of this label regarding rates per acre of PENTAGON DG and herbicides used in combination with PENTAGON DG. When a rate range is recommended, unless other directions are given in a crop section, the high rate of the range should be used if heavy weed populations are anticipated or if extensive crop residues were present prior to seedbed preparation.

#### SOIL TEXTURES

The rate tables for recommended PENTAGON DG treatments for each crop refer to coarse, medium, and fine soils. Soil type should be determined since rates for PENTAGON DG treatments will change with soil texture. The following table lists soil types for coarse, medium and fine soils:

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COARSE	MEDIUM	FINE
sands loamy sands sandy loams	sandy clay loams* sandy clays loams silt loams silts	silty clay loams* silty clays clay loams clays

\*Sometimes considered transitional soils and may be classified as either medium or fine textured soils.

PENTAGON DG is not recommended for use on peat or muck soils, unless otherwise specified.

### CHEMIGATION

PENTAGON DG may be applied through sprinkler irrigation systems in cotton, field corn, grain sorghum, peanuts, potatoes, soybeans and sunflowers. Follow all label recommendations for these crops regarding rates per acre, timing of application, special instructions, and precautions.

Apply this product only through a sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move irrigation systems. Do not apply this product through any other type of irrigation system.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water.

The system must be properly calibrated (with water only) to ensure that the amount of PENTAGON DG applied corresponds to the recommended rate.

Apply PENTAGON DG in 1/2 to 3/4 inches of water during the first sprinkler set. When application is complete, flush the system with water.

If you have any questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other experts.

#### Special Precautions for Chemigation

1. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label prescribed safety devices for public water systems are in place.
2. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.
3. The system must be free of leaks and clogged nozzles.
4. The pesticide must be supplied continuously for the duration of the aqueous application. An uneven application may cause injury to the crop or poor weed control.

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5. Agitation must be maintained in the nurse tank.
  6. The sprinkler-chemigation system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
  7. The pesticide injection pipeline must contain a functional, automatic, quick closing check valve to prevent the flow of fluid back toward the injection pump.
  8. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
  9. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
  10. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
  11. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
  12. Do not apply when wind speed favors drift beyond the area intended for treatment.

#### **Chemigation Systems Connected to Public Water Systems**

1. Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
2. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
3. All chemigation systems connected to public water systems must also follow restrictions listed in the preceding section titled "CHEMIGATION".

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**WEEDS CONTROLLED**

The following grass and broadleaf weeds are controlled by treatments of PENTAGON DG in all registered crops at the rates recommended for each soil texture in the respective crop section:

<b>Grasses Controlled</b>	<b>Broadleaves Controlled</b>
Barnyardgrass	Carpetweed
Crabgrass	Florida pusley
Crowfootgrass	Kochia
Field Sandbur	Lambsquarters
Foxtail (giant)	Pigweed ( <i>Amaranthus</i> spp.)
Foxtail (green)	Purslane
Foxtail (yellow)	Smartweed, Pennsylvania <sup>1</sup>
Goosegrass	Spurge, annual
Johnsongrass, seedling	Velvetleaf (buttonweed) <sup>1</sup>
Panicum, fall	
Panicum, Texas (Buffalograss)	
Signalgrass	<sup>1</sup> Reduced competition only
Witchgrass	

In addition to the weeds listed above as being controlled, PENTAGON DG (when applied as directed) will control the weeds in the crops indicated in the following table:

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<b>WEEDS CONTROLLED - Grasses</b>	<b>CROP</b>
Bluegrass, annual	Nonbearing fruit and nuts and vineyards
Guineagrass	Sugarcane
Itchgrass (Raoulgrass)	Soybeans <sup>1</sup> Sugarcane <sup>2</sup> (not Hawaii)
Johnsongrass, rhizome	Cotton <sup>1</sup> Soybeans <sup>1</sup>
Junglerice	Nonbearing fruit and nuts and vineyards Rice Sugarcane
Lovegrass	Nonbearing fruit and nuts and vineyards
Panicum, Browntop	Nonbearing fruit and nuts and vineyards Sugarcane
Red Rice	Soybeans <sup>1</sup>
Shattercane	Field Corn <sup>3</sup> Grain Sorghum <sup>3</sup> Soybeans <sup>1</sup>
Sprangletop ( <i>Leptochloa</i> spp.)	Rice Nonbearing fruit and nuts and vineyards
Swollen fingergrass	Sugarcane
Volunteer Sorghum	Cotton <sup>6</sup>
Wild Proso Millet	Field <sup>4</sup> and Sweet Corn Grain Sorghum <sup>3</sup>
Woolly cupgrass	Field <sup>5</sup> and Sweet Corn Nonbearing fruit and nuts and vineyards Soybeans <sup>1</sup>
<b>WEEDS CONTROLLED - Broadleaves</b>	<b>CROP</b>
Carpetweed	Sunflowers, no-till
Chickweed, common	Nonbearing fruit and nuts and vineyards
Fiddleneck	Nonbearing fruit and nuts and vineyards
Henbit	Nonbearing fruit and nuts and vineyards
Knotweed, prostrate	Nonbearing fruit and nuts and vineyards
London rocket	Nonbearing fruit and nuts and vineyards
Smartweed, Pennsylvania	Field and Sweet Corn Nonbearing fruit and nuts and vineyards
Puncturevine	Nonbearing fruit and nuts and vineyards
Sheperdspurse	Nonbearing fruit and nuts and vineyards
Stinging nettle	Potatoes
Velvetleaf	Field and Sweet Corn Nonbearing fruit and nuts and vineyards

<sup>1</sup> Control or reduced competition (refer to appropriate section for use instructions; see table of contents for page number).

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- 2 PENTAGON DG must be applied at the 5 pounds/acre broadcast rates for itchgrass control. Surface application (no mechanical incorporation) will provide partial itchgrass control. An additional application of 3.3 to 5 pounds/acre may be made at layby.
  - 3 Control with CULTI-SPRAY applications only. Refer to appropriate section for use instructions; see table of contents for page number.
  - 4 PENTAGON DG will control wild proso millet when applied as a CULTI-SPRAY application. PENTAGON DG will reduce the competition of wild proso millet when applied preemergence. Effective management of wild proso millet can be achieved with a program involving herbicide applications and mechanical cultivation to eliminate weed escapes. PENTAGON DG plus Accent, Bladex or Extrazine II applied early postemergence (no later than when corn is in the 4-leaf stage) treatments have provided the most consistent suppression of wild proso millet because: (1) early postemergence treatments provide a burn-down of the initial germination flush of wild proso millet and (2) early postemergence treatments provide residual activity later into the growing season.
  - 5 Effective management of woolly cupgrass can be achieved with a program involving herbicide applications and mechanical cultivation to eliminate weed escapes. PENTAGON DG plus Accent, Bladex or Extrazine II applied early postemergence (no later than when corn is in the 4-leaf stage) treatments have provided the most consistent control of woolly cupgrass because: (1) early postemergence treatments provide a burn-down of the initial germination flush of woolly cupgrass and (2) early postemergence treatments provide residual activity later into the growing season.
  - 6 Use the high rate for each soil texture. Apply broadcast to flat land and mechanically incorporate (two passes at an angle to one another) prior to bedding up.

<b>SPRAYING INSTRUCTIONS</b>
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**GROUND APPLICATIONS**

Use a properly calibrated low-pressure (20 to 40 psi) sprayer equipped with flood nozzles or 8002 or larger size Tee-Jet (or comparable flat fan nozzles) to achieve uniform spray distribution and minimize drift. Keep the bypass line on or near the bottom of the tank to minimize foaming. Nozzle and in-line screens must be no finer than 50 mesh. DO NOT apply PENTAGON DG during periods of gusty winds. As with all herbicides, windy conditions can cause uneven applications.

**BROADCAST TREATMENT** - Uniformly apply in 10 or more gallons of water or 20 or more gallons of liquid fertilizer as specified in the appropriate sections of this booklet.

**BAND TREATMENT** - Uniformly apply the broadcast equivalent rate and volume per acre. To determine these:

<u>Band width in inches</u>	X	Broadcast RATE per acre	=	Band RATE per acre
Row width in inches				
 <u>Band width in inches</u>	 X	 Broadcast VOLUME per acre	 =	 Band VOLUME per ac. e
Row width in inches				

## AERIAL APPLICATIONS

Uniformly apply in 5 or more gallons of water per acre. Exercise caution to minimize drift. DO NOT apply during periods of gusty winds or when wind conditions favor drifting. Spray drift can cause injury to sensitive crops. It is recommended that a flagman or an automatic mechanical flagging unit on the aircraft be used to avoid overlapping and possible crop injury.

## INCORPORATION INSTRUCTIONS

Break up clods before a preplant incorporated application.

### 1. Flat-planted crop:

PENTAGON DG is to be incorporated prior to planting and within 7 days of application. When PENTAGON DG is applied to flat land that will not be bedded, mechanical incorporation should be into the top 1 or 2 inches of soil. Mechanical incorporation of PENTAGON DG into the top 1 or 2 inches of soil can be achieved by the following:

- (a) Disk harrow set to cut 3 to 4 inches deep and operated in two different directions at 4 to 6 mph. The second pass should be made at an angle to the first.
- (b) PTO-driven equipment (tillers, cultivators, hoes) set to cut 2 inches deep and operated one time at 4 mph or less.
- (c) Rolling cultivator set to cut 2 to 3 inches deep and operated two times at 6 to 8 mph. The second pass should be made at an angle to the first. Use only on coarse and medium textured soils.
- (d) Field cultivator set to cut 3 inches deep operated two times at more than 5 mph. The second pass should be made at an angle to the first. Equipment must have 3 or 4 rows of sweeps, spaced at intervals of 7 inches or less and staggered so that no soil is left unturned. Do not use chisel points.
- (e) LELY-ROTERRA<sup>1</sup> set and operated according to the manufacturer's directions to thoroughly incorporate PENTAGON DG to a depth of 1 to 2 inches.
- (f) Do-All set and operated according to the manufacturer's directions to thoroughly incorporate PENTAGON DG to a depth of 1 to 2 inches.

**NOTE:** PENTAGON DG can be incorporated in a single pass when the soil is of good tilth with moderate moisture and relatively free of clods and trash. Implements must be properly set up to thoroughly incorporate PENTAGON DG into the top 1 or 2 inches of soil. Recommended implements include: (1) C-shank or S-shank field cultivators equipped with flexline drag or rolling basket attachment and (2) the combination disk/field cultivator implement equipped with flexline drag or rolling basket attachment. Field cultivators must have 3 or 4 rows of sweeps, spaced at intervals of 7 inches or less and staggered so that no soil is left unturned. Implements must be operated at 6 to 8 miles per hour and set to cut 3 to 4 inches deep.

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<sup>1</sup>LELY-ROTERRA is a trademark of Lely.

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2. Bedded crop - Application Over Beds

PENTAGON DG is to be incorporated prior to planting and within 7 days of application. When PENTAGON DG is applied over beds, mechanical incorporation should be into the top 1 or 2 inches of soil. Mechanical incorporation of PENTAGON DG into the top 1 or 2 inches of soil can be achieved by the following:

- (a) Rolling cultivator set to cut 2 to 3 inches deep and operated two times at 6 to 8 mph. Use only on coarse and medium textured soils.
- (b) PTO-driven equipment (tillers, cultivators, hoes) set to cut 2 inches deep and operated one time at 4 mph or less.
- (c) Bed conditioner set to cut 2 to 3 inches deep and operated one time at 4 to 6 mph.

During planting, or if beds must be reshaped prior to planting, avoid tillage that will bring untreated soil to the surface or expose untreated soil in the seedbed or in the furrow.

3. Bedded Crop - Application Prior to Bedding

PENTAGON DG is to be incorporated prior to planting and within 7 days of application. When PENTAGON DG is applied to flat land prior to bedding, mechanical incorporation should be of sufficient depth so that bedding does not bring up untreated soil. Mechanical incorporation of PENTAGON DG can be achieved by the following:

- (a) Disk harrow set to cut 4 to 6 inches deep and operated in two different directions at 4 to 6 mph. The second pass should be made at an angle to the first.
- (b) PTO-driven equipment (tillers, cultivators, hoes) set to cut 3 to 4 inches deep and operated one time at 4 mph or less. During planting, or if beds must be reshaped prior to planting, avoid tillage that will bring untreated soil to the surface or expose untreated soil on the seedbed or in the furrow.

**APPLICATIONS WITH LIQUID FERTILIZERS**

PENTAGON DG alone or in tank mix combinations with wettable powders (WP), dry flowables (DF), flowables (F), water soluble concentrates (S) or emulsifiable concentrates (EC) may not combine properly with some liquid fertilizer materials. Small quantities should always be tested before full scale mixing. Follow the testing procedure below to determine compatibility and if a compatibility agent is needed.

Follow all PENTAGON DG label recommendations regarding registered crops, rates per acre, timing of application, special instructions and precautions. Apply treatments in 20 or more gallons of liquid fertilizer per acre with ground equipment. DO NOT apply PENTAGON DG postemergence in liquid fertilizers.

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All individual state regulations relating to fluid fertilizer mixing, registration, labeling and application are the responsibility of the individual and/or company selling the PENTAGON DG/liquid fertilizer mixture.

### LIQUID FERTILIZER COMPATIBILITY DETERMINATIONS

If liquid fertilizer/herbicide(s) mixture separates in the spray tank, clogged equipment and uneven application can result, which can cause poor weed control and crop injury. Always predetermine the compatibility of PENTAGON DG alone or with other herbicides in the specific liquid fertilizer to be used according to the following directions:

1. Add 1 pint of fertilizer to a quart jar.
2. Add appropriate number of teaspoons of PENTAGON DG pre-slurried in 3 oz of water to the jar. The number of teaspoons of the formulation to add can be determined by the following formula:

$$\frac{\text{lbs or pts of product/acre}}{\text{Gallons of fertilizer/acre}} \times 11.4 = \text{number of teaspoons of herbicide to add to 1 pint of fertilizer.}$$

3. Close the jar and agitate until the PENTAGON DG is evenly dispersed in the liquid fertilizer.
4. Add 1 to 4 teaspoon(s) of the DF, WP, AS, F, L or EC formulation (depending on mixing ratio required) to the liquid fertilizer (see formula in step 2). If the materials do not disperse well, it may be necessary to slurry the chemicals in water before adding to the fertilizer. Let the mixture stand for 30 minutes and then observe the results. Look for signs of separation, an oily layer or globules, sludge, flakes or other precipitates.
5. Determine compatibility.
  - (a) If the herbicide(s) and liquid fertilizer mixture does not separate, use this mixture in your spray tank.
  - (b) If the mixture separates, but mixes readily with shaking, the mixture can be used providing good agitation is maintained in the spray tank.
  - (c) If separation of the mixture occurs and agitation does not correct this problem, a compatibility agent\* is needed.
6. If the need for a compatibility agent\* is demonstrated the following procedure is recommended: Using a clean quart jar repeat step one above and add 1/2 teaspoon of the compatibility agent to the liquid fertilizer. Mix well and repeat steps 2, 3 and 4. If separation or precipitation occurs with the compatibility agent, DO NOT use PENTAGON DG with that specific liquid fertilizer.

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An effective compatibility agent will cause the mixture to remain uniformly dispersed with little or no separation (oil rising to the surface) for one half hour or longer. If slight separation occurs, 2 to 3 inversions of the jar should be sufficient to redisperse the mixture uniformly.

Use a clean jar for each test. A compatible mixture will have a uniform appearance and will be relatively easy to redisperse with gentle agitation of the jar.

\*Compex-Kalo Laboratories Incorporated, Kansas City, MO; Sponto 168-D-Witco Chemical Company, Houston, TX; Unite-Hopkins Agricultural Chemical Company, Madison, WI; or other comparable adjuvants.

#### CULTURAL PRACTICES FOLLOWING APPLICATION

Should weeds develop, a shallow cultivation or rotary hoeing will generally result in better weed control. A PENTAGON DG treatment may be followed by any registered herbicide to control weeds not listed on the PENTAGON DG label.

#### FOLLOW CROP RESTRICTIONS

1. Land treated with PENTAGON DG may be planted to other crops the following year. See restrictions below for sugar beets, red beets, and spinach.
2. Winter wheat, winter barley

Winter wheat and winter barley may be planted in the fall 4 months after a PENTAGON DG application in any registered crop. Winter wheat and winter barley may be planted in the fall 3 months after a PENTAGON DG CULTI-SPRAY application in irrigated field corn or grain sorghum. The treated crop must be grown to maturity and harvested before planting wheat or barley.

In areas where irrigation is necessary to produce the crop treated with PENTAGON DG, DO NOT plant winter wheat or winter barley as follow crops if crop failure/destruction occurs and land is fallowed during the summer as crop injury may result.

DO NOT plant winter wheat or winter barley as follow crops in treated land if higher PENTAGON DG rates were used in soybeans for rhizome johnsongrass or red rice control or itchgrass suppression or for weed control in no-till cotton or rhizome johnsongrass control in cotton.

DO NOT feed forage or graze livestock for 75 days after planting wheat or barley in treated land.

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3. Sugar beets, red beets, spinach

To avoid crop injury, do not plant sugar beets, red beets or spinach for 12 months following a PENTAGON DG application. Land should be plowed to a depth of 12 inches prior to planting these crops.

4. When PENTAGON DG is used in tank-mix or sequential combinations, refer to label of other herbicides for additional follow crop restrictions.

Use of PENTAGON DG herbicide in accordance with label directions is expected to result in normal growth of rotational crops in most situations; however, various environmental and agronomic factors make it impossible to eliminate all risks associated with the use of this product and therefore, rotational crop injury is always possible.

# FIELD CORN

## GENERAL INSTRUCTIONS

PENTAGON DG may be applied in conventional, minimum or no-till as a preemergence, early postemergence or CULTI-SPRAY (postemergence incorporated) application in field corn.

**DO NOT APPLY PREPLANT INCORPORATED or serious corn injury can result.**

DO NOT apply PENTAGON DG in no-till in California.

With the exception of minimum or no-tillage systems (see below) plant into a seed bed that is firm and free of clods and trash. Use only where adequate tillage is practiced to provide good soil coverage of the corn seed. **PLANT CORN AT LEAST 1 1/2 INCHES DEEP. CORN SEED MUST BE COMPLETELY COVERED WITH SOIL.**

PENTAGON DG or PENTAGON DG tank-mix combination treatments are most effective in controlling weeds when adequate rainfall or overhead irrigation is received within 7 days after application. If cultivation is necessary because of soil crusting, soil compaction or weed germination before rain or irrigation, use shallow tillage (such as rotary hoe), and make certain corn seeds are below the tilled area.

When PENTAGON DG alone is used, if corn loss occurs due to weather conditions, corn or any crop registered for PENTAGON DG preplant incorporated use can be replanted the same year without adverse effects. If corn is replanted, seeding depth must be below retilled area or crop injury may occur.

**DO NOT exceed the maximum labeled rate for any soil type.**

PENTAGON DG is not recommended for use on peat or muck soils.

### Field Corn Grown in Minimum or No-Tillage Systems

PENTAGON DG alone and PENTAGON DG tank mixtures may be used in field corn in minimum or no-tillage systems. **PLANT CORN AT LEAST 1 1/2 INCHES DEEP. CORN SEED MUST BE COMPLETELY COVERED WITH SOIL.** The use of no-till planters under conditions which do not allow good soil coverage of the corn seed can result in reduced crop stand or injury if PENTAGON DG contacts the germinating corn seed. Check equipment to ensure good seed coverage.



## Use Methods and Timings

**Preemergence** - Apply PENTAGON DG after planting, but before weeds and crop emerge. Apply PENTAGON DG tank mixes and sequential programs as specified under the tank mix section.

**Early Postemergence** - Apply PENTAGON DG tank mixes postemergence according to corn height and weed size specified under the tank mix section. PENTAGON DG alone will not control emerged weeds. For maximum effectiveness, wait at least 7-10 days before cultivating early postemergence treatments.

**CULTI-SPRAY** (postemergence incorporated) - Apply PENTAGON DG alone or PENTAGON DG plus atrazine when corn is at least 4 inches tall until layby (last cultivation). Refer to page 31 for complete CULTI-SPRAY instructions.

**DO NOT APPLY PREPLANT INCORPORATED** or serious corn injury can result.

## PENTAGON DG Use Rates in Field Corn

Recommended use rates for PENTAGON DG alone and in tank mix or sequential applications are given in the following table.

**Broadcast Rate<sup>1</sup> per Acre of PENTAGON DG Preemergence  
or Early Postemergence in Field Corn  
(Pounds per Acre)**

Soil Texture	<1.5 % Organic Matter	1.5-3.0% Organic Matter	>3.0% Organic Matter
Coarse	1.25 to 1.7 lbs	1.7 to 2.5 lbs	2.5 lbs
Medium	1.7 to 2.5 lbs	2.5 lbs	2.5 to 3.3 lbs
Fine	1.7 to 2.5 lbs	2.5 to 3.3 lbs	2.5 to 3.3 lbs

<sup>1</sup>USE THE HIGH RATE FOR EACH SOIL CLASSIFICATION WHEN USING PENTAGON DG ALONE.

## PENTAGON DG Tank Mixes and Sequential Programs in Field corn

PENTAGON DG may be applied in a tank mix with Accent, Accent plus Beacon, atrazine, atrazine plus Bladex, Banvel, Banvel plus Bladex, Beacon, Bicep, Bicep II, Bladex, Buctril + atrazine, Bullet, Dual, Dual II, Extrazine II, Frontier, Guardsman, Harness, Lariat, Lasso, Marksman, Marksman plus Bladex, Surpass or Surpass 100. Refer to the companion label for weeds controlled in addition to PENTAGON DG alone.

When using tank mixtures or sequential applications with PENTAGON DG, always read the companion product label(s) to determine the specific use rates by soil types, weed species, and weed or crop growth stage. In addition, follow all precautions and restrictions including state and local use restrictions that may apply to specific products. Always follow the most restrictive label.

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## RESTRICTIONS FOR EARLY POSTEMERGENCE APPLICATIONS

To avoid serious crop injury with early postemergence applications observe the following restrictions:

- DO NOT apply PENTAGON DG plus Bladex 90DF or PENTAGON DG plus Extrazine II DF if 5th corn leaf is visible.
- DO NOT use Bladex 4L or Extrazine II 4L postemergence on corn.
- DO NOT apply PENTAGON DG plus Bladex 90DF or PENTAGON DG plus Extrazine II DF under extended cold (below 50°F), wet weather conditions, or when cold, wet conditions are predicted. Bladex or Extrazine injury can occur under these conditions.
- DO NOT apply in liquid fertilizer.

**Follow additional use directions in this table for PENTAGON DG tank mixes.  
(Refer to page 24 to determine PENTAGON DG use rate)**

PENTAGON DG alone or PENTAGON DG tank mixes may be used with Gramoxone Extra or Roundup herbicides, after planting but before crop emergence, to kill existing vegetation. Refer to these labels for specific use recommendations, rates and weeds controlled.

<p>PENTAGON DG plus Accent or Accent SP (1/3 to 2/3 oz/A)</p> <p>DO NOT use in California.</p>	<p><b>Preemergence followed by Early Postemergence</b> - Apply PENTAGON DG after planting but before weeds or crops emerge. Apply Accent early postemergence at 1/3 to 1/2 ounce per acre to corn up through the 6-leaf stage and before <u>giant foxtail</u>, <u>seedling johnsongrass</u> and <u>shattercane</u> exceed a height of 3 inches or at 2/3 ounce per acre before the corn exceeds 24 inches tall and weeds exceed the height on the Accent label.</p> <p><b>Early Postemergence</b> - Apply tank mix at 1/3 to 1/2 ounce per acre of Accent to corn through the 6-leaf stage and before <u>giant foxtail</u>, <u>seedling johnsongrass</u> and <u>shattercane</u> exceed a height of 3 inches or at 2/3 ounce per acre of Accent to 6-leaf stage corn and before weeds exceed the height recommended on the Accent label.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Accent label.</li> <li>• <u>Giant Foxtail</u>, <u>seedling johnsongrass</u> and <u>shattercane</u> are the only weeds controlled early postemergence by Accent when applied at 1/3 to 1/2 ounce per acre and before the weeds exceed a height of 3 inches.</li> <li>• Atrazine, Banvel, Buctril, Buctril + atrazine, <u>Clarity</u> or Marksman herbicides may be tank mixed with PENTAGON DG plus Accent for improved broadleaf weed control.</li> <li>• For early postemergence applications of Accent or PENTAGON DG plus Accent, add a non-ionic surfactant (NIS) at 0.25% vol/vol (1 quart per 100 gallons of spray solution) or a Crop Oil Concentrate (COC) at 1.0% vol/vol (1 gallon per 100 gallons of spray solution). With NIS, the addition of a liquid nitrogen fertilizer solution (28% nitrogen at 2-4 quarts/acre) or spray grade ammonium sulfate (2-4 lbs/acre) may improve the weed control of certain emerged species by Accent. DO NOT use COC in combination with liquid fertilizer or ammonium sulfate. When used with an additional broadleaf herbicide, select adjuvants based on the adjuvant limitations of the herbicide.</li> <li>• Banded applications of COUNTER<sup>®</sup> CR systemic insecticide - nematicide can be used with PENTAGON DG and Accent treatments. Refer to the COUNTER CR and Accent labels for use directions, precautions and restrictions.</li> <li>• DO NOT apply Accent through any type of irrigation system.</li> </ul> <p><small>™ Trademark of Sandoz Crop Protection Inc. ® Registered Trademark of American Cyanamid Company</small></p>
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<p>PENTAGON DG plus Accent or Accent SP (1/3 oz/A) plus Beacon (0.38 oz/A)</p> <p>DO NOT use in California.</p>	<p><b>Preemergence followed by Early Postemergence - Apply PENTAGON DG after planting, but before weeds or crops emerge. Apply Accent plus Beacon postemergence before the corn exceeds 20 inches tall and the weeds exceed the height limitations given below.</b></p> <p><b>Early Postemergence - Apply tank mix to corn through the 6-leaf stage and before weeds exceed the height limitations given below.</b></p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Accent and Beacon labels.</li> <li>• <b>Weeds Controlled and height (inches):</b> <table border="0" style="width: 100%;"> <tr> <td>Fall Panicum (2-4)</td> <td>Shattercane (4-12)</td> <td>Giant ragweed (2-6)</td> </tr> <tr> <td>Giant foxtail (2-4)</td> <td>Sorghum Alumum (4-12)</td> <td>Jimsonweed (1-4)</td> </tr> <tr> <td>Green foxtail (1-4)</td> <td>Cocklebur (1-4)</td> <td>P. Smartweed ((1-2)</td> </tr> <tr> <td>Quackgrass (4-8)</td> <td>Common ragweed (2-6)</td> <td>Redroot pigweed (1-4)</td> </tr> <tr> <td>S. johnsongrass (4-12)</td> <td>Eastern black nightshade (1-4)</td> <td>Sunflowers (1-4)</td> </tr> </table> </li> <li>• <b>Weeds Suppressed and height (inches):</b> <table border="0" style="width: 100%;"> <tr> <td>Lambsquarters (&lt;1.5)</td> <td>Velvetleaf (1-4)</td> <td>Woolly cupgrass (1-4)</td> </tr> <tr> <td>Morningglory (&lt;1.5)</td> <td>Wild proso millet (1-4)</td> <td>Yellow foxtail (1-4)</td> </tr> <tr> <td>Sandbur (1-3)</td> <td></td> <td></td> </tr> </table> </li> <li>• If application is made during cool (&lt;50° F), dry weather or to weeds hardened by cold or drought, the "controlled weeds" may only be suppressed.</li> <li>• Banvel, Buctril or Clarity herbicides may be tank mixed with PENTAGON DG plus Accent plus Beacon for improved broadleaf weed control.</li> <li>• For early postemergence applications of Accent plus Beacon or PENTAGON DG plus Accent plus Beacon, add a non-ionic surfactant (NIS) at 0.25% vol/vol (1 quart per 100 gallons of spray solution) or a Crop Oil Concentrate (COC) at 1.0% vol/vol (1 gallon per 100 gallons of spray solution). With NIS, the addition of a liquid nitrogen fertilizer solution (28% nitrogen at 2-4 quarts/acre) or spray grade ammonium sulfate (2-4 lbs/acre) may improve the weed control of certain emerged species by Accent plus Beacon. DO NOT use COC in combination with liquid fertilizer or ammonium sulfate. When used with an additional broadleaf herbicide, select adjuvants based on the adjuvant limitations of the herbicide.</li> <li>• Mixing order: Add the ingredients to water in the following order with the agitator running: Accent, Beacon, PENTAGON DG and adjuvant(s). Thoroughly mix each ingredient before adding another.</li> <li>• DO NOT apply Accent or Beacon through any type of irrigation system.</li> </ul>	Fall Panicum (2-4)	Shattercane (4-12)	Giant ragweed (2-6)	Giant foxtail (2-4)	Sorghum Alumum (4-12)	Jimsonweed (1-4)	Green foxtail (1-4)	Cocklebur (1-4)	P. Smartweed ((1-2)	Quackgrass (4-8)	Common ragweed (2-6)	Redroot pigweed (1-4)	S. johnsongrass (4-12)	Eastern black nightshade (1-4)	Sunflowers (1-4)	Lambsquarters (<1.5)	Velvetleaf (1-4)	Woolly cupgrass (1-4)	Morningglory (<1.5)	Wild proso millet (1-4)	Yellow foxtail (1-4)	Sandbur (1-3)		
Fall Panicum (2-4)	Shattercane (4-12)	Giant ragweed (2-6)																							
Giant foxtail (2-4)	Sorghum Alumum (4-12)	Jimsonweed (1-4)																							
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Morningglory (<1.5)	Wild proso millet (1-4)	Yellow foxtail (1-4)																							
Sandbur (1-3)																									
<p>PENTAGON DG plus Atrazine (1.0 to 2.0 lbs ai/A)</p>	<p><b>Preemergence - Apply after planting, but before weeds or crops emerge.</b></p> <p><b>Early Postemergence - Apply from spike through the 4-leaf stage and before weeds exceed 1 inch in height except for <i>Texas panicum</i> which must be no larger than the 2 leaf stage.</b></p> <p><b>Culti-Spray (postemergence incorporated) - Refer to page 31 for application instructions.</b></p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the atrazine label.</li> <li>• DO NOT exceed 1.2 lbs ai/A of atrazine for Culti-Spray applications.</li> </ul>																								

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<p>PENTAGON DG plus Atrazine (0.4 to 0.8 lbs ai/A) plus Bladex 90DF (0.45 to 1.78 lbs/A) or Bladex 4L (0.4 to 1.6 qts/A)</p>	<p><b>Preemergence</b> - Apply after planting, but before weeds or crops emerge.</p> <p><b>Early Postemergence</b> - Apply from spike through the 4-leaf stage and before weeds exceed 1" in height except for <i>Texas panicum</i> which must be no larger than the 2-leaf stage.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the atrazine and Bladex labels.</li> <li>• DO NOT apply tank mixture under extended cold (50°F), wet weather conditions, or when cold, wet conditions are predicted. Bladex injury can occur under these conditions.</li> <li>• DO NOT use this combination on sands or loamy sands with less than 1% organic matter.</li> <li>• DO NOT apply Bladex 4L postemergence.</li> <li>• DO NOT apply Bladex by air.</li> </ul>
<p>PENTAGON DG plus Banvel (0.5 to 0.75 pts/A)</p> <p>DO NOT use postemergence in California</p>	<p><b>Preemergence</b> - Apply after planting, but before weeds or crops emerge. When applying this tank mixture at planting, the spray nozzles must be far enough behind the planter to avoid contact of the spray mixture with the seeds to avoid crop injury. DO NOT use on furrow irrigated corn.</p> <p><b>Early Postemergence</b> - Apply from spike through the 4-leaf stage and before weeds exceed 1" in height. Emerged grasses will not be controlled by this tank mix.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Banvel label.</li> <li>• Apply only on level planted corn.</li> <li>• DO NOT use on sands, loamy sands, or sandy loams. DO NOT use on medium or fine textured soils containing less than 2% organic matter.</li> <li>• Apply in water with ground equipment only.</li> <li>• AVOID drift of this mixture to soybeans or other sensitive crops.</li> <li>• DO NOT apply this tank mixture by aircraft.</li> </ul>
<p>PENTAGON DG plus Banvel (0.5 to 1.0 pt/A) plus Bladex 90DF (1.0 to 2.22 lbs/A) or Bladex 4L (1.0 to 2.0 qts/A)</p> <p>DO NOT use in California.</p>	<p><b>Preemergence</b> - Apply after planting, but before weeds or crops emerge. DO NOT use on furrow irrigated corn.</p> <p><b>Early Postemergence</b> - Apply from spike through the 4-leaf stage and before weeds exceed 1" in height except for <i>Texas panicum</i> which must be no larger than the 2 leaf stage.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Banvel and Bladex labels.</li> <li>• Apply only on level planted corn.</li> <li>• DO NOT apply this tank mixture preemergence on any soils with less than 2% organic matter.</li> <li>• DO NOT use this tank mixture postemergence on any soils with less than 1% organic matter.</li> <li>• DO NOT apply this tank mixture by air. Avoid drift of this mixture to soybeans or other sensitive crops.</li> <li>• DO NOT apply under extended cold (&lt;50° F) and wet weather conditions, or when cold, wet conditions are predicted or serious crop injury can result. Bladex injury can occur under these conditions.</li> <li>• DO NOT apply through any type of irrigation system.</li> <li>• DO NOT apply Bladex 4L postemergence on corn.</li> </ul>

<p>PENTAGON DG plus Beacon (0.38 or 0.76 oz/A)</p> <p>DO NOT use in California.</p>	<p><b>Preemergence followed by Early Postemergence - Apply PENTAGON DG after planting, before weeds or crops emerge. Apply Beacon postemergence before corn exceeds 20 inches tall and the weeds exceed the height limitations on the Beacon label.</b></p> <p><b>Early Postemergence - Apply tank mix to corn through the 6-leaf stage and before weeds exceed the height recommended on the Beacon label.</b></p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Beacon label.</li> <li>• Banvel, Buctril, Clarity or 2,4-D may be tank mixed with PENTAGON DG plus Beacon for improved broadleaf weed control.</li> <li>• For early postemergence applications of Beacon or PENTAGON DG plus Beacon, add a non-ionic surfactant (NIS) at 0.25% vol/vol (1 quart per 100 gallons of spray solution) or a Crop oil Concentrate (COC) at 1.0% vol/vol (1 gallon per 100 gallons of spray solution). With NIS, the addition of a liquid nitrogen fertilizer solution (28% nitrogen at 2-4 quarts/acre) or spray grade ammonium sulfate (2-4 lbs/acre) may improve the weed control of certain emerged species by Beacon. DO NOT use COC in combination with liquid fertilizer or ammonium sulfate. When used with an additional herbicide, select adjuvants based on the adjuvant limitations of the herbicide.</li> <li>• DO NOT apply Beacon through any type of irrigation system.</li> </ul>
<p>PENTAGON DG plus Bicep or Bicep II (1.5 to 3.0 qts/A)</p> <p>DO NOT use in California.</p>	<p><b>Preemergence - Apply after planting, but before weeds or crops emerge. Preemergence applications may be made through center pivot irrigation systems.</b></p> <p><b>Early Postemergence - Apply from spike through the 4-leaf stage and when weeds are no larger than the 1-2 leaf growth stage. For best results, destroy emerged weeds by cultivation prior to application. DO NOT apply Bicep II postemergence.</b></p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Bicep label.</li> <li>• Add PENTAGON DG to the spray tank prior to the addition of Bicep.</li> </ul>
<p>PENTAGON DG plus Bladex 90DF (1.11 to 2.67 lbs/A) or Bladex 4L (1.0 to 2.4 qts/A)</p>	<p><b>Preemergence - Apply after planting, but before weeds or crops emerge.</b></p> <p><b>Early Postemergence - Apply from spike through the 4-leaf stage and before weeds exceed 1" in height except for <i>Texas panicum</i> which must be no larger than the 2-leaf stage.</b></p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Bladex label.</li> <li>• DO NOT apply tank mixture under extended cold (50°F), wet weather conditions, or when cold, wet conditions are predicted. Bladex injury can occur under these conditions.</li> <li>• DO NOT use this combination on sands or loamy sands with less than 1% organic matter.</li> <li>• DO NOT apply Bladex 4L postemergence.</li> <li>• DO NOT apply Bladex by air.</li> <li>• The maximum rate for Bladex 90DF for early postemergence applications is 2.2 lbs of product per acre.</li> </ul>
<p>PENTAGON DG plus Buctril + Atrazine (1.5 to 2.0 pts/A)</p> <p>DO NOT use in California.</p>	<p><b>Early Postemergence - Apply from spike through the 4-leaf stage and before weeds exceed the height on the Buctril + atrazine label. This tank mix will not adequately control emerged grasses.</b></p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Buctril + atrazine label.</li> </ul>

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<p>PENTAGON DG plus Dual or Dual II <sup>†</sup> (1.25 to 2.5 pts/A)</p> <p>DO NOT use in California.</p>	<p>Preemergence - Apply after planting, but before weeds or crops emerge. Preemergence applications may be made through center pivot irrigation systems.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Dual label.</li> </ul>
<p>PENTAGON DG plus Dual or Dual II (1.25 to 2.5 pts/A) plus Bladex 90DF (1.0 to 2.22 lbs/A) or Bladex 4L (1.0 to 2.0 qts/A)</p> <p>DO NOT use in California.</p>	<p>Preemergence - Apply after planting, but before weeds or crops emerge.</p> <p>Early Postemergence - Apply from spike through the 4-leaf stage and before weeds exceed 1" in height except for <i>Texas panicum</i> which must be no larger than the 2-leaf stage.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Bladex and Dual label.</li> <li>• DO NOT apply tank mixture under extended cold (50°F), wet weather conditions, or when cold, wet conditions are predicted. Bladex injury can occur under these conditions.</li> <li>• DO NOT use this combination on sands or loamy sands with less than 1% organic matter.</li> <li>• DO NOT apply Bladex 4L or Dual II postemergence.</li> <li>• DO NOT apply Bladex by air.</li> <li>• The maximum rate for Bladex 90DF for early postemergence applications is 2.2 lbs of product per acre.</li> </ul>
<p>PENTAGON DG plus Extrazine II DF (0.8 to 3.3 lbs/A) or Extrazine II 4L (0.75 to 3.0 qts/A)</p> <p>DO NOT use in California.</p>	<p>Preemergence - Apply after planting, but before weeds or crops emerge.</p> <p>Early Postemergence - Apply from spike through the 4-leaf stage and before weeds exceed 1" in height except for <i>Texas panicum</i> which must be no larger than the 2-leaf stage</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Extrazine label.</li> <li>• DO NOT apply tank mixture under extended cold (50°F), wet weather conditions, or when cold, wet conditions are predicted. Extrazine injury can occur under these conditions.</li> <li>• DO NOT use this combination on sand or loamy sands with less than 1% organic matter.</li> <li>• DO NOT apply Extrazine II 4L postemergence.</li> <li>• DO NOT apply this tank mix by air.</li> <li>• The maximum rate for Extrazine II DF for early postemergence applications is 2.2 lbs/A.</li> </ul>
<p>PENTAGON DG plus Frontier (13 to 25 ozs/A)</p> <p>DO NOT use in California.</p>	<p>Preemergence - Apply after planting, but before weeds or crops emerge.</p> <p>Early Postemergence - Apply after corn emergence but before corn exceeds 3 inches in height. Emerged weeds will not be controlled by this tank mix.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Frontier label.</li> </ul>
<p>PENTAGON DG plus Guardzman (2.5 to 5.0 pts/A)</p> <p>DO NOT use in California.</p>	<p>Preemergence - Apply after planting, but before weeds or crops emerge.</p> <p>Early Postemergence - Apply up to 3 inch tall corn but before weeds exceed 1.5 inches in height.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Guardzman label.</li> </ul>

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<p>PENTAGON DG plus Harness (1.25 to 3.0 pts/A)</p> <p>DO NOT use in California.</p>	<p><b>Preemergence</b> - Apply after planting, but before weeds or crops emerge. Apply within 5 days of last preplant tillage operation.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Harness Plus label.</li> </ul>
<p>PENTAGON DG plus Lariat (2.0 to 4.5 qts/A) or Bullet (2.0 to 4.5 qts/A)</p> <p>DO NOT use in California.</p>	<p><b>Preemergence</b> - Apply after planting, but before weeds or crops emerge. Preemergence applications may be made through center pivot irrigation systems.</p> <p><b>Early Postemergence</b> - Apply from spike through the 4-leaf stage and when weeds are no larger than 2-leaf growth stage. Apply with ground equipment in water only.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Lariat and Bullet labels.</li> <li>• DO NOT graze treated area or feed treated forage to livestock for 21 days following application.</li> </ul>
<p>PENTAGON DG plus Lasso (1.5 to 4.0 qts/A)</p> <p>DO NOT use in California.</p>	<p><b>Preemergence</b> - Apply after planting, but before weeds or crops emerge. This treatment must be applied within 5 days of the last preplant tillage operation. Preemergence applications may be made through center pivot irrigation systems.</p> <p><b>Early Postemergence</b> - Apply after corn emergence, but before corn exceeds 5 inches in height. Emerged weeds will not be controlled by this tank mix.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Lasso label.</li> </ul>
<p>PENTAGON DG plus Marksman (2.0 to 3.5 pts/A)</p> <p>DO NOT use in California.</p>	<p><b>Preemergence</b> - Apply after planting, but before weeds or crops emerge. DO NOT use on furrow irrigated corn.</p> <p><b>Early Postemergence</b> - Apply after corn emergence but no later than when corn is in the 2-leaf stage of growth and weeds are no larger than 1 inch tall.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Marksman label.</li> <li>• Apply only on level planted corn.</li> <li>• DO NOT apply preemergence on any soils with less than 2.0% organic matter.</li> <li>• AVOID drift to soybeans or other sensitive crops.</li> </ul>

<p>PENTAGON DG plus Marksman (2.0 to 2.5 pts/A) plus Bladex 90DF (1.0 to 2.22 lbs ai/A) or Bladex 4L (1.0 to 2.0 qts/A)</p> <p>DO NOT use in California.</p>	<p><b>Preemergence</b> - Apply after planting, but before weeds or crops emerge. AVOID drift to soybeans or other sensitive crops. DO NOT use on furrow irrigated corn.</p> <p><b>Early Postemergence</b> - Apply after corn emergence but no later than when corn is in the 2-leaf stage of growth and weeds are no larger than 1 inch tall.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Marksman and Bladex label.</li> <li>• Apply only on level planted corn.</li> <li>• DO NOT apply tank mixture under extended cold (50°F), wet weather conditions, or when cold, wet conditions are predicted. Bladex injury can occur under these conditions.</li> <li>• DO NOT apply preemergence on any soils with less than 2% organic matter.</li> <li>• DO NOT use this tank mixture postemergence on any soils with less than 1% organic matter.</li> <li>• DO NOT apply Bladex 4L postemergence.</li> <li>• DO NOT apply Bladex by air.</li> </ul>
<p>PENTAGON DG plus Surpass (1.0 to 3 3/4 pts/A)</p> <p>DO NOT use in California.</p>	<p><b>Preemergence</b> - Apply after planting, but before weeds or crops emerge.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Surpass label.</li> </ul>
<p>PENTAGON DG plus Surpass 100 (1.6 to 3.3 qts/A)</p> <p>DO NOT use in California.</p>	<p><b>Preemergence</b> - Apply after planting, but before weeds or crops emerge.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Surpass 100 label.</li> </ul>

**CULTI-SPRAY (POSTEMERGENCE INCORPORATED)**

**General Instructions**

PENTAGON DG or PENTAGON DG plus atrazine tank mixtures applied as a CULTI-SPRAY (postemergence incorporated) treatment will control most late season annual grasses and certain broadleaf weeds in field corn. PENTAGON DG treatments can be applied from the 4-inch growth stage to as late as the last cultivation (layby) of field corn. PENTAGON DG plus atrazine must be applied before the field corn reaches 12 inches in height. PENTAGON DG treatments will not control established weeds. DESTROY EMERGED WEEDS BY CULTIVATION PRIOR TO PENTAGON DG APPLICATION.

CULTI-SPRAY (postemergence incorporated) applications of PENTAGON DG or PENTAGON DG plus atrazine tank mixture can be applied in field corn previously treated with herbicides registered for use in field corn. Consult the labels of those herbicides for suggested treatments, rates to be used, and precautions or restrictions for use in field corn and for Follow Crop Restrictions.

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**CULTI-SPRAY (Postemergence Incorporated) APPLICATIONS  
PENTAGON DG alone or PENTAGON DG plus Atrazine**

1. Cultivate with a sweep-type or rolling cultivator operated at sufficient speed to throw at least one inch of soil over the bases of the field corn plants. This will kill small weed seedlings growing in the field corn row and will prevent direct contact of the zone of brace root formation by PENTAGON DG during application.
2. Apply broadcast with a ground sprayer when corn is at least 4 inches tall up to layby (last cultivation). Use drop nozzles if crop foliage will prevent uniform coverage of the soil surface within the rows.
3. Thoroughly and uniformly incorporate PENTAGON DG treatments into the soil (1) with a sweep-type or rolling cultivator set to provide thorough incorporation in the top 1 inch of soil OR (2) with adequate irrigation water or rainfall. For best results, incorporate PENTAGON DG treatments as soon as possible after application. Incorporation must be completed within 7 days after application. If adequate moisture is not received within 7 days after application, incorporate PENTAGON DG with a sweep-type or rolling cultivator.

Under situations of low rainfall or soil moisture, when deep germinating weeds such as shattercane or field sandbur are anticipated, mechanical incorporation will provide best results.

If cultivation is needed after application and incorporation of PENTAGON DG, the depth of cut should be no deeper than the depth of cut used to incorporate.

**Broadcast Rate Per Acre of PENTAGON DG CULTI-SPRAY  
(Postemergence Incorporated) in Field Corn  
(Pounds per Acre)**

Soil Texture	Southern States <sup>1</sup>	Northern States <sup>1</sup>
Coarse	0.85 to 1.25 lbs	1.25 to 1.7 lbs
Medium	1.25 to 1.7 lbs	1.7 to 2.5 lbs
Fine	1.25 to 2.5 lbs	1.7 to 2.5 lbs

**For PENTAGON DG plus atrazine tank mixtures, do not exceed 1.2 lb a.i. per acre of atrazine.**

<sup>1</sup> See map at end of this label for specific states.

**NOTE:** Livestock can graze or be fed forage from treated field corn after 21 days following application.

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# SWEET CORN

**For use in Alabama, Arizona, Idaho, California, Florida, Georgia, Illinois, Minnesota, Montana, Oregon, New York, Texas, Washington and Wisconsin.**

## GENERAL INSTRUCTIONS

PENTAGON DG may be applied preemergence only in sweet corn (all varieties) in Arizona, California, Idaho, Montana, Oregon, Texas and Washington.

PENTAGON DG may be applied preemergence or early postemergence in sweet corn (processing varieties only) in Illinois, Minnesota, New York and Wisconsin.

~~PENTAGON DG may be applied early postemergence only in sweet corn in Alabama, Florida and Georgia. PENTAGON DG can only be applied early postemergence with atrazine. DO NOT apply PENTAGON DG alone or with any other product in these states.~~

**DO NOT APPLY PREPLANT INCORPORATED or serious corn injury can result.**

Plant into a seed bed that is firm and free of clods and trash. Use only where adequate tillage is practiced to provide good soil coverage of the corn seed. **PLANT CORN AT LEAST 1 1/2 INCHES DEEP. CORN SEED MUST BE COMPLETELY COVERED WITH SOIL.**

PENTAGON DG or PENTAGON DG tank-mix combination treatments are most effective in controlling weeds when adequate rainfall or overhead irrigation is received within 7 days after application. If cultivation is necessary because of soil crusting, soil compaction or weed germination before rain or irrigation, use shallow tillage (such as rotary hoe), and make certain corn seeds are below the tilled area.

When PENTAGON DG alone is used, if corn loss occurs due to weather conditions, corn or any crop registered for PENTAGON DG preplant incorporated use can be replanted the same year without adverse effects. If corn is replanted, seeding depth must be below retilled area or crop injury may occur.

PENTAGON DG is not recommended for use on peat or muck soils.

## Use Methods and Timings

**Preemergence** - Apply PENTAGON DG after planting, but before weeds and crop emerge. Apply PENTAGON DG tank mixes as specified under the tank mix section.

**Early Postemergence** - Apply PENTAGON DG tank mixes postemergence according to corn height and weed size specified under the tank mix section. PENTAGON DG alone will not control emerged weeds. For maximum effectiveness, wait at least 7-10 days before cultivating early postemergence treatments.

PENTAGON DG may only be applied postemergence to sweet corn in Alabama, Arizona, Florida, Georgia, Illinois, Minnesota, New York and Wisconsin. DO NOT apply postemergence to sweet corn in Arizona, California, Idaho, Montana, Oregon, Texas and Washington.

DO NOT APPLY PREPLANT INCORPORATED or serious corn injury can result.

**PENTAGON DG Use Rates in Sweet Corn**

Recommended use rates for PENTAGON DG alone and in tank mix applications are given in the following table.

**Broadcast Rate<sup>1</sup> per Acre of PENTAGON DG Preemergence and Early Postemergence in Sweet Corn (Pounds per Acre)**

Soil Texture	<1.5 % Organic Matter	1.5-3.0% Organic Matter	>3.0% Organic Matter
Coarse	1.25 to 1.7 lbs	1.7 to 2.5 lbs	2.5 lbs
Medium	1.7 to 2.5 lbs	2.5 lbs	2.5 to 3.3 lbs
Fine	1.7 to 2.5 lbs	2.5 to 3.3 lbs	2.5 to 3.3 lbs

<sup>1</sup>USE THE HIGH RATE FOR EACH SOIL CLASSIFICATION WHEN USING PENTAGON DG ALONE.

**PENTAGON DG Tank Mixes in Sweet corn**

PENTAGON DG may be applied in a tank mix with atrazine, atrazine plus Bladex, Bicep, Bicep II, Bladex, Dual, Dual II, Extrazine II, Lariat or Bullet, or Lasso. Refer to the companion label for weeds controlled in addition to PENTAGON DG alone.

When using tank mixtures with PENTAGON DG, always read the companion product label(s) to determine the specific use rates by soil types, weed species, and weed or crop growth stage. In addition, follow precautions and restrictions including state and local use restrictions that may apply to specific products. Always follow the most restrictive label.

**RESTRICTIONS FOR EARLY POSTEMERGENCE APPLICATIONS**

To avoid serious crop injury with early postemergence applications observe the following restrictions:

- DO NOT apply following PENTAGON DG preemergence applications.
- DO NOT apply PENTAGON DG plus Bladex 90DF or PENTAGON DG plus Extrazine II DF if 5th corn leaf is visible.
- DO NOT use Bladex 4L or Extrazine II 4L postemergence on corn.
- DO NOT apply PENTAGON DG plus Bladex 90DF or PENTAGON DG plus Extrazine II DF under extended cold (below 50°F), wet weather conditions, or when cold, wet conditions are predicted. Bladex or Extrazine injury can occur under these conditions.
- DO NOT apply in liquid fertilizer.

Follow additional use directions in this table for PENTAGON DG tank mixes.  
(Refer to page 34 to determine PENTAGON DG use rate)

<p>PENTAGON DG plus Atrazine (1.0 to 2.0 lb ai/A)</p>	<p><b>Preemergence</b> - Apply after planting, but before weeds or crops emerge.</p> <p><b>Early Postemergence</b> - Apply from spike through the 4-leaf stage but before weeds exceed 1 inch in height except for <i>Texas panicum</i> which must be no larger than the 2-leaf stage.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the atrazine label.</li> <li>• In Alabama, Florida and Georgia, PENTAGON DG can only be applied with atrazine early postemergence. <b>DO NOT</b> apply PENTAGON DG alone or with any other product in these states.</li> </ul>
<p>PENTAGON DG plus Atrazine (0.4 to 0.8 lbs ai/A) plus Bladex 90DF (0.45 to 1.78 lbs/A) or Bladex 4L (0.4 to 1.6 qts/A)</p>	<p><b>Preemergence</b> - Apply after planting, but before weeds or crops emerge.</p> <p><b>Early Postemergence</b> - Apply from spike through the 4-leaf stage but before weeds exceed 1 inch in height except for <i>Texas panicum</i> which must be no larger than the 2 leaf stage.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the atrazine and Bladex labels.</li> <li>• DO NOT use this combination on sands or loamy sands with less than 1% organic matter.</li> <li>• DO NOT apply tank mixture under extended cold (50°F), wet weather conditions, or when cold, wet conditions are predicted. Bladex injury can occur under these conditions.</li> <li>• DO NOT apply Bladex 4L postemergence.</li> <li>• DO NOT apply Bladex by air.</li> </ul>
<p>PENTAGON DG plus Bicep or Bicep II (1.5 to 3.0 qts/A)</p> <p>DO NOT use in California.</p>	<p><b>Preemergence</b> - Apply after planting, but before weeds or crops emerge.</p> <p><b>Early Postemergence</b> - Apply from spike through the 4-leaf stage and when weeds are no larger than the 1-2 leaf growth stage. For best results, destroy emerged weeds by cultivation prior to application. DO NOT apply Bicep II postemergence.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Bicep label.</li> <li>• Add PENTAGON DG to the spray tank prior to the addition of Bicep</li> </ul>

<p>PENTAGON DG plus Bladex 90DF (1.11 to 2.67 lbs/A) or Bladex 4L (1.0 to 2.4 qts/A)</p>	<p><b>Preemergence</b> - Apply after planting, but before weeds or crops emerge.</p> <p><b>Early Postemergence</b> - Apply from spike through the 4-leaf stage but before weeds exceed 1 inch in height except for <i>Texas panicum</i> which must be no larger than the 2-leaf stage.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Bladex label.</li> <li>• DO NOT use this combination on sands or loamy sands with less than 1% organic matter.</li> <li>• DO NOT apply tank mixture under extended cold (50°F), wet weather conditions, or when cold, wet conditions are predicted. Bladex injury can occur under these conditions.</li> <li>• DO NOT apply Bladex 4L postemergence.</li> <li>• DO NOT apply Bladex by air.</li> <li>• The maximum rate for Bladex 90DF for early postemergence applications is 2.2 lbs of product per acre.</li> </ul>
<p>PENTAGON DG plus Dual or Dual II (1.25 to 2.5 pts/A)</p> <p>DO NOT use in California.</p>	<p><b>Preemergence</b> - Apply after planting, but before weeds or crops emerge.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Dual label.</li> </ul>
<p>PENTAGON DG plus Extrazine II DF (0.8 to 3.3 lbs/A) or Extrazine II 4L (0.75 to 3.0 qts/A)</p> <p>DO NOT use in California.</p>	<p><b>Preemergence</b> - Apply after planting, but before weeds or crops emerge.</p> <p><b>Early Postemergence</b> - Apply from spike through the 4-leaf stage but before weeds exceed 1 inch in height except for <i>Texas panicum</i> which must be no larger than the 2-leaf stage</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Extrazine label.</li> <li>• DO NOT apply tank mixture under extended cold (50°F), wet weather conditions, or when cold, wet conditions are predicted. Extrazine injury can occur under these conditions.</li> <li>• DO NOT use this combination on sand or loamy sands with less than 1% organic matter.</li> <li>• DO NOT apply Extrazine II 4L postemergence.</li> <li>• DO NOT apply this tank mix by air.</li> <li>• The maximum rate for Extrazine II DF for early postemergence applications is 2.2 lbs/A.</li> </ul>
<p>PENTAGON DG plus Lariat (2.0 to 4.5 qts/A) or Bullet (2.0 to 4.5 qts/A)</p> <p>DO NOT use in California.</p>	<p><b>Preemergence</b> - Apply after planting, but before weeds or crops emerge.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Lariat or Bullet label.</li> <li>• DO NOT graze treated area or feed treated forage to livestock for 21 days following application.</li> </ul>

<p>PENTAGON DG plus Lasso (1.5 to 4.0 qts/A)</p> <p>DO NOT use in California.</p>	<p><b>Preemergence</b> - Apply after planting, but before weeds or crops emerge. This treatment must be applied within 5 days of the last preplant tillage.</p> <p><b>Early Postemergence</b> - Apply after planting but before corn exceeds 5 inches in height. Apply in ground equipment with water only. Emerged weeds will not be controlled by this tank mix.</p> <ul style="list-style-type: none"><li>• Read and strictly follow all precautions and instructions on the Lasso label.</li></ul>
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**COTTON**

**GENERAL INSTRUCTIONS**

PENTAGON DG may be applied in conventional, minimum, stale seedbed or no-till as a preplant surface, preplant incorporated or preemergence application in cotton.

DO NOT use in no-till cotton in California.

Preplant surface and preemergence treatments are most effective in controlling weeds when adequate rainfall or overhead irrigation is received within 7 days after application. A shallow cultivation is recommended if soil crusting or soil compaction occurs. If weeds begin to germinate or adequate moisture is not received within 7 days after application, use shallow tillage (rotary hoe or light harrow) and make sure cotton seeds are below tilled area. Otherwise, the use of a postemergence herbicide treatment may be required to control weed escapes at planting or following cotton emergence.

In the event of a crop loss due to weather conditions, cotton or any crop registered for PENTAGON DG preplant incorporated use can be replanted without adverse effects the same year. If replanting is necessary, DO NOT rework the soil deeper than the treated zone.

DO NOT feed forage or graze livestock in treated cotton fields.

PENTAGON DG is not recommended for use on peat or muck soils.

**Use Methods and Timings**

**Preplant Surface** - Apply PENTAGON DG up to 15 days prior to planting. Apply PENTAGON DG tank mixes and sequential programs as specified under the tank mix section.

**Preplant Incorporated** - Apply PENTAGON DG up to 60 days prior to planting and incorporate within 7 days of application. Apply PENTAGON DG tank mixes and sequential programs as specified under the tank mix section.

**Preemergence** - Apply PENTAGON DG at planting or up to 2 days after planting. Apply to a seedbed which is firm and free of clods. Apply PENTAGON DG tank mixes and sequential programs as specified under the tank mix section.

**Preplant Incorporated followed by Preemergence** - Apply PENTAGON DG up to 60 days prior to planting and incorporate within 7 days of application. Apply overlay application of PENTAGON DG at planting or up to 2 days after planting. **Total amount of PENTAGON DG applied per acre cannot exceed the highest labeled rate for a given soil type.** Preplant incorporated and preemergence applications of PENTAGON DG may be applied with labeled tank mix herbicide(s).

**Fall Application** - PENTAGON DG may be applied for weed control in cotton in the fall, after October 15 (up to 140 days prior to planting cotton) in Arizona, California, Louisiana, New Mexico, Mississippi, Oklahoma and Texas. Apply PENTAGON DG at the broadcast rate of 1.25 pounds on coarse soils, 1.7 pounds on medium soils and 2.5 pounds on fine soils.

**PENTAGON DG Use Rates in Cotton**

Recommended use rates for PENTAGON DG alone and in tank mix or sequential applications are given in the following table.

**Broadcast Rate per Acre of PENTAGON DG  
in Cotton  
(Pounds per Acre)**

Soil Texture	Conventional or Minimum Tillage	No-Tillage <sup>1</sup>
Coarse	0.85 to 1.25 lbs	1.25 to 1.7 lbs
Medium	1.25 to 1.7 lbs	1.7 to 2.5 lbs
Fine	1.7 to 2.5 lbs	2.5 to 3.3 lbs

<sup>1</sup>THIS USE IS NOT RECOMMENDED FOR SOILS WITH MORE THAN 3% ORGANIC MATTER.

For heavy clay soils, apply PENTAGON DG at the broadcast rate of 2.5 pounds per acre.

The high rates for each soil texture above should be used if heavy weed populations are anticipated, extensive crop residues were present prior to seedbed preparation or in no-till.

**PENTAGON DG Tank Mixes and Sequential Programs in Cotton**

PENTAGON DG may be applied in a tank mix with fluometuron (i.e. Cotoran) prometryn (i.e. Caparol) and Zorial. PENTAGON DG may be applied in a sequential application with fluometuron, diuron (i.e. Karmex) or Zorial. Refer to the companion label for weeds controlled in addition to PENTAGON DG alone.

When using tank mixtures or sequential applications with PENTAGON DG, always read the companion product label(s) to determine the specific use rates by soil types, weed species, and weed or crop growth stage. In addition, follow all precautions and restrictions including state and local use restrictions that may apply to specific products. Always follow the most restrictive label.

**Follow additional use directions in this table for PENTAGON DG tank mixes.  
(Refer to the table above to determine PENTAGON DG use rate)**

For no-till, PENTAGON DG alone or PENTAGON DG tank mixes may be used with Gramoxone Extra or Roundup herbicides to kill existing vegetation if present before planting. Refer to these labels for specific use recommendations, rates and weeds controlled.



<p>PENTAGON DG plus fluometuron (i.e. Cotoran) (0.8 to 2.0 lbs ai/A)</p>	<p><b>Preplant Incorporated followed by preemergence</b> - Apply PENTAGON DG up to 60 days prior to planting and incorporate within 7 days of application. Apply fluometuron as an overlay preemergence application as directed on the fluometuron label (use the fluometuron alone preemergence rates).</p> <p><b>Preemergence</b> - Apply immediately after planting (or crop injury may result) in water or nitrogen solution with ground equipment only. <b>DO NOT</b> apply tank mix preemergence in Arizona, California, Oklahoma, New Mexico and West Texas.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the fluometuron label.</li> <li>• Plant cotton seeds 1 inch or deeper below the soil surface.</li> <li>• The use of fluometuron as a preemergence application following the use of a systemic insecticide at planting, may result in injury to cotton. <b>DO NOT</b> plant crops other than cotton within 6 months of the last application of fluometuron or injury may result.</li> <li>• Maintain good agitation at all times until spraying is completed.</li> <li>• <b>DO NOT</b> feed foliage from treated cotton plants or gin trash to livestock.</li> </ul>
<p>PENTAGON DG plus prometryn (i.e. Caparol) (1.2 to 2.4 lbs ai/A)</p> <p>For use in Arizona, California, New Mexico, and the Upper and Lower El Paso Valley of Texas.</p>	<p><b>Preplant Incorporated</b> - Apply with ground equipment prior to listing or over partially finished or finished beds. Incorporate immediately after application.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the prometryn label.</li> <li>• <b>DO NOT</b> use on sands or loamy sands.</li> <li>• <b>DO NOT</b> use this tank mix in cut areas of newly leveled fields, in areas of excess salt or in areas where flooding over the bed is likely to occur as crop injury may result. Cotton should not be planted in tractor wheel depressions or crop injury may result.</li> <li>• <b>DO NOT</b> use this tank mixture when cotton is irrigated up as crop injury may result. On mulch planted cotton, water back only after cotton seedlings are well established.</li> <li>• Maintain good agitation at all times until spraying is completed to keep the material in suspension. Mechanical agitation should be used in Arizona and California.</li> <li>• If replanting is necessary, do not rework the soil.</li> </ul>
<p>PENTAGON DG plus prometryn (i.e. Caparol)</p> <p>For use in specified areas of Oklahoma and Texas.</p>	<p><b>Preplant Surface</b> - Apply up to 15 days before planting.</p> <p><b>Preemergence</b> - Apply at planting or up to 2 days after planting before weeds and crops emerge.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the prometryn label.</li> <li>• See the prometryn label for use rates and specified areas of Oklahoma and Texas.</li> </ul>
<p>PENTAGON DG plus diuron (i.e. Karmex) (0.5 to 1.6 lbs ai/A)</p>	<p><b>Preplant Incorporated followed by preemergence</b> - Apply PENTAGON DG up to 60 days prior to planting and incorporate within 7 days of application. Apply diuron as an overlay preemergence application as directed on the diuron label (use the diuron alone preemergence rates).</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the diuron label.</li> <li>• The use of diuron as a preemergence application following the use of a systemic insecticide at planting, may result in injury to cotton.</li> </ul>

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<p>PENTAGON DG plus Zorial Rapid 80 or 80WP (1.25 to 2.5 lbs/A)</p> <p>DO NOT use in Arizona, California, New Mexico, Oklahoma and Texas.</p>	<p><b>Preplant Surface</b> - Apply up to 15 days prior to planting.</p> <p><b>Preplant Incorporated</b> - Apply up to 30 days prior to planting and incorporate within 7 days of application. DO NOT incorporate deeper than 2-3 inches with commonly used equipment.</p> <p><b>Preemergence</b> - Apply tank mix with ground equipment immediately after planting or crop injury may result. Make sure cotton seeds are placed 1 inch or deeper below soil surface.</p> <p><b>Preplant Incorporated followed by preemergence</b> - Apply PENTAGON DG up to 60 days prior to planting and incorporate within 7 days of application. Apply Zorial as an overlap preemergence application as directed on the Zorial label (use the Zorial alone preemergence rates).</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Zorial label.</li> <li>• If the cotton plant is stressed during early development, application of PENTAGON DG plus Zorial at the label rate may result in temporary bleaching or chlorosis of the leaves from which the plant will recover.</li> <li>• Maintain good agitation at all times until application is complete.</li> </ul>
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**Preplant Incorporated Application of PENTAGON DG for Control of Rhizome Johnsongrass**

PENTAGON DG applied preplant incorporated for two consecutive years will provide control of rhizome johnsongrass (*Sorghum halepense*) in cotton at the rates recommended for soil textures listed below. This use is not recommended for Arizona, New Mexico and California. Rhizome johnsongrass will be suppressed after the first year and controlled after the second year.

Before application, use a chisel plow or similar implement to bring johnsongrass rhizomes to the surface. Chop rhizomes into small pieces with a disk harrow set to cut 4 to 6 inches deep and operated in two different directions at 4 to 6 mph.

PENTAGON DG is to be incorporated into the soil within 7 days after application prior to planting. For maximum control of rhizome johnsongrass, incorporate PENTAGON DG as soon as possible after application. Deep and thorough incorporation of PENTAGON DG is necessary for control of rhizome johnsongrass. Mechanical incorporation can be achieved by the following methods:

- a) Disk harrow set to cut 4 to 6 inches deep and operated in two different directions at 4 to 6 mph.
- b) PTO-driven equipment (tillers, cultivators, hoes) set to cut 3 to 4 inches deep and operated one time at 4 mph or less.

For johnsongrass escapes during the crop season, cultivation and/or application of registered postemergence herbicides is recommended. Follow the directions for use on the labels of the respective herbicides.

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**Broadcast Rate Per Acre of PENTAGON DG Preplant Incorporated  
for Control of Rhizome Johnsongrass in Cotton  
APPLY FOR TWO CONSECUTIVE YEARS**

<b>Soil Texture (Up to 3% organic matter<sup>1</sup>)</b>	<b>PENTAGON DG (pounds)</b>
Coarse	1.7
Medium	2.5
Fine	3.3

<sup>1</sup> THIS USE IS NOT RECOMMENDED FOR SOILS WITH MORE THAN 3% ORGANIC MATTER.

NOTE: DO NOT feed forage or graze livestock in treated cotton fields.

If cotton crop loss occurs due to weather conditions, cotton or soybeans can be replanted the same year into treated soil without adverse effects. If replanting is necessary, DO NOT rework the soil deeper than the treated zone.

4-11-1

**EDIBLE BEANS**  
**Dry, Lima, Snap, Chickpeas (Garbanzo beans),**  
**Southern Peas (Cowpeas) and Sweet Lupines**

**GENERAL INSTRUCTIONS**

PENTAGON DG may only be applied preplant incorporated in chickpeas (garbanzo beans), dry beans (such as navy, great northern, red kidney, black turtle, cranberry and small white type), lima beans, snap beans and southern peas (cowpeas).

PENTAGON DG may be applied preplant incorporated or preemergence in sweet lupines.

DO NOT feed lupine hay and forage or graze livestock in treated lupine fields.

In the event of a crop loss due to weather conditions, beans or any crop registered for PENTAGON DG preplant incorporated use can be replanted without adverse effects the same year. If replanting is necessary, DO NOT rework the soil deeper than the treated zone.

PENTAGON DG is not recommended for use on peat or muck soils.

**Use Methods and Timings**

**Preplant Incorporated** - Apply PENTAGON DG up to 60 days prior to planting and incorporate within 7 days of application. Apply PENTAGON DG tank mixes as specified under the tank mix section.

**Preemergence** - Apply PENTAGON DG to sweet lupines only at planting or up to 2 days after planting. Apply to a seedbed which is firm and free of clods. DO NOT APPLY PENTAGON DG PREEMERGENCE (surface treatments) to chickpeas, dry beans, lima beans, snap beans and southern peas (cowpeas) after planting or serious crop injury can result.

**PENTAGON DG Use Rates in Edible Beans**

Recommended use rates for PENTAGON DG alone and in tank mix applications are given in the following table.

**Broadcast Rate<sup>1</sup> per Acre of PENTAGON DG in Edible Beans  
(Pounds per Acre)**

Soil Texture	Southern States <sup>1</sup>		Northern States <sup>1</sup>	
		<3% Organic Matter	> 3% Organic Matter	
Coarse	0.85 to 1.25 lbs	0.85 to 1.7 lbs	1.7 lbs	
Medium	1.25 to 1.7 lbs	1.25 to 2.1 lbs	2.1 to 2.5 lbs	
Fine	1.25 to 2.5 lbs	1.7 to 2.5 lbs	2.5 lbs	

<sup>1</sup>SEE MAP AT THE END OF THIS LABEL FOR SPECIFIC STATES.

Use the 2.5 pound rate for heavy clay soils.

**PENTAGON DG Tank Mixes in Edible Beans**

PENTAGON DG may be applied in a tank mix with Dual, Eptam, Lasso or Micro-Tech. Refer to the companion label for weeds controlled in addition to PENTAGON DG alone.

When using tank mixtures with PENTAGON DG, always read the companion product label(s) to determine the specific use rates by soil types, weed species, and weed or crop growth stage. In addition, follow all precautions and restrictions including state and local use restrictions that may apply to specific products. Always follow the most restrictive label.

Follow additional use directions in this table for PENTAGON DG tank mixes.  
(Refer to Page 43 to determine PENTAGON DG use rate)

<p>PENTAGON DG plus Dual (1.5 to 3.0 pts/A)</p> <p>For use in dry, lima or snap beans, chickpeas, and southern peas.</p>	<p><b>Preplant Incorporated</b> - Apply up to 14 days prior to planting and incorporate within 7 days of application.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Dual label.</li> <li>• DO NOT apply preemergence to dry, lima or snap beans, chickpeas or southern peas.</li> <li>• DO NOT graze or feed forage or fodder.</li> <li>• DO NOT apply to sweet lupines.</li> </ul>
<p>PENTAGON DG plus Eptam (2.5 to 4.5 pts/A)</p> <p>For use in Dry and Snap Beans only.</p>	<p><b>Preplant Incorporated</b> - Apply with ground sprayer up to 2 days prior to planting. Incorporate immediately (within minutes) after application to prevent loss of Eptam. Whenever possible, application and incorporation should be done in the same application.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Eptam label.</li> <li>• <b>Incorporation Instructions</b> - Use power driven cultivation equipment set to cut to a depth of 2 to 3 inches or tandem disks set to cut to a depth of 4 to 6 inches, operated at 4 to 6 mph, followed by a spike-toothed harrow or some other leveling device which extends beyond the ends of the disks. For thorough mixing, disk in two different directions (cross disk).</li> <li>• DO NOT exceed 3.5 pints Eptam per acre on small white beans on coarse-textured soils.</li> <li>• DO NOT use this tank mixture on Adzuki beans, chickpeas, southern peas (cowpeas, including blackeye peas, blackeye beans), soybeans, lima beans or other flat podded beans.</li> <li>• DO NOT feed bean hay, vines and forage or graze livestock in treated bean fields.</li> <li>• For nutsedge control, use 4.5 pints of Eptam per acre.</li> </ul>

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<p><b>PENTAGON DG</b> plus Lasso or Micro-Tech (2.5 to 3.0 qts/A) or Partner WDG (3.8 to 4.8 lbs/A)</p> <p><b>For use only in Dry Beans</b> west of the Mississippi river. <b>DO NOT</b> use in California.</p>	<p><b>Preplant Incorporated</b> - Apply within 7 days prior to planting and incorporate within 7 days of application.</p> <ul style="list-style-type: none"><li>• Read and strictly follow all precautions and instructions on the Lasso or Micro-Tech label.</li><li>• Apply in water with ground equipment only.</li><li>• This tank mixture may delay crop maturity and/or reduce yield if cold, wet soil conditions occur after planting.</li></ul>
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# FORAGE LEGUMES

## GENERAL INSTRUCTIONS

PENTAGON DG may be used in FORAGE LEGUMES USED AS A COVER CROP IN FEDERAL SET-ASIDE OR CONSERVATION RESERVE PROGRAM AREAS.

Some stand reduction of the legume cover crop may occur with this use. Consult local county extension service or the local ASC committee for recommended cover crops.

If loss of cover crop occurs due to adverse weather conditions, any crop registered for PENTAGON DG preplant incorporated use can be replanted the same year into PENTAGON DG-treated soil without adverse effects. If replanting is necessary, DO NOT rework the soil deeper than the PENTAGON DG-treated zone.

DO NOT feed or graze legume cover crops established following PENTAGON DG application.

The cover crop residue should ultimately be destroyed by tillage or left on the surface to retard erosion or as directed by the local ASC committee.

## Use Methods and Timings

PENTAGON DG may be applied preplant incorporated or preemergence for weed control in legume cover crops. Refer to **Mixing, Application and Incorporation Instructions, Weeds Controlled and Follow Crop Restrictions** sections (see table of contents for page numbers).

## PENTAGON DG Use Rates in Forage Legumes

Recommended use rates for PENTAGON DG alone is given in the following table.

**Broadcast Rate Per Acre of PENTAGON DG  
Preplant Incorporated in Forage Legumes  
(Pounds per Acre)**

Soil Texture	Rate
Coarse	0.85 to 1.25 lbs
Medium	1.25 to 1.7 lbs
Fine	1.7 to 2.1 lbs

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**GARLIC, DRY BULB SHALLOTS, AND  
DIRECT-SEEDED AND  
TRANSPLANTED DRY BULB ONIONS**

**GENERAL INSTRUCTIONS**

Uniformly apply in 10 or more gallons of water per acre with ground equipment, or 5 or more gallons of water per acre with aircraft. CHEMIGATION: PENTAGON DG may only be applied through center pivot irrigation. DO NOT apply through other irrigation systems. Apply PENTAGON DG between the 2 to 9 true leaf stage (2 to 6 true leaf stage in California) only. DO NOT irrigate in excess of 0.5 inches of water. Refer to page 13 for CHEMIGATION directions.

PENTAGON DG treatments are most effective when adequate rainfall or overhead irrigation is received within 7 days after application.

DO NOT use on onions in New York, except as specified in other labeling.

DO NOT mechanically incorporate except as specified for use on dry bulb onions in Colorado and the Texas High Plains.

DO NOT apply to green (bunching) onions or leeks.

**Use Directions for Mineral Soils**

**Broadcast Rate per Acre of PENTAGON DG Herbicide  
for Use on Mineral Soils in All States  
(Pounds per Acre)**

Soil Texture	Rate
Coarse	0.85 to 1.25 lbs
Medium	1.25 to 1.7 lbs
Fine	1.25 to 2.5 lbs

DO NOT exceed 2.5 pounds per acre per crop (except Idaho, Oregon and Washington). DO NOT apply within 60 days of harvest in California and within 45 days of harvest in all other states. DO NOT feed or graze these crops.

If loss of treated crop occurs due to adverse weather conditions, any crop registered for preplant incorporated use of PENTAGON DG can be replanted the same year. If replanting is necessary, DO NOT rework the soil deeper than 2 inches.

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## GARLIC

PENTAGON DG may be applied to garlic in the following ways:

- (a) Preemergence after planting but before crop and weeds emerge.
- (b) Postemergence to the garlic at the 1 to 5 true leaf growth stage.
- (c) As a split application, apply at both preemergence and postemergence timings.

## DRY BULB SHALLOTS AND DIRECT-SEEDED AND TRANSPLANTED DRY BULB ONIONS

### In All States Except California:

Apply PENTAGON DG as a broadcast treatment when onions or shallots have 2 to 9 true leaves.

### Additional Use in Colorado, Kansas and Nebraska:

PENTAGON DG may be applied sequentially in seeded onions. Apply first application of PENTAGON DG at loop stage. Apply sequential application of PENTAGON DG early postemergence (2 to 9 true leaf stage). DO NOT exceed the maximum labeled rate for a given soil texture.

### Additional Use in Colorado and the Texas High Plains:

For transplanted onions only, apply and shallow incorporate (less than 2" deep) PENTAGON DG into preformed beds prior to transplanting.

### Additional Use in Idaho, Oregon, and Washington:

PENTAGON DG may be used at 2.5 to 3.3 pounds per acre for dodder control on medium and fine textured soils. DO NOT apply PENTAGON DG using chemigation at the dodder control rate.

PENTAGON DG may be applied in the fall or spring to the furrow area of land bedded in the fall in preparation for planting seed of dry bulb onions the following spring. Apply PENTAGON DG as a banded application at rates based on appropriate soil texture. Band width should be approximately 1/2 the width of the row spacing. Keep PENTAGON DG away from the area where onion seed will be planted. Harrow-off tops of beds following PENTAGON DG furrow applications prior to planting onions. For selective weed control in the onion row, apply PENTAGON DG as a banded pos.emergence application to flag leaf onions at the labeled rates based on soil texture. Apply PENTAGON DG only once to the furrow area and once to the onion row as a postemergence application.

### Additional Use in Michigan:

For mineral soils containing >10% organic matter, follow the directions for muck soils (see below).

### In California:

PENTAGON DG may only be applied as a single application when onions or shallots have 2 to 6 true leaves.

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**Use Directions for Muck Soils  
(Onions Only)**

**On MUCK SOILS in All States Except California:**

PENTAGON DG may be applied sequentially to ONIONS ONLY on muck soils as follows:

**Broadcast Rate per Acre and Application Timing  
of PENTAGON DG Herbicide for Muck Soils  
(Pounds per Acre)**

Application Timing and Growth Stage	Rate
Preemergence through loop Stage	1.7 to 3.3 lbs
Early Postemergence (2 to 6 true leaf stage)	2.5 to 3.3 lbs
Late Postemergence (6 to 9 true leaf stage)	2.5 to 3.3 lbs

**DO NOT** apply more than 10 pounds per acre per growing season on muck soils. To maximize crop safety, ensure good soil coverage during planting or transplanting and delay preemergence applications to the loop stage if possible.

**DO NOT** apply PENTAGON DG preemergence through the loop stage if heavy rains are expected or else severe crop injury may result. If irrigating immediately after PENTAGON DG application at the preemergence through loop stage, **DO NOT** irrigate in excess of 0.5 inches of water.

**DO NOT** apply within 45 days of harvest.

**DO NOT** plant sugar beets, red beets, spinach, winter wheat, or winter barley as rotational crops on muck soils for 12 months from the time of last application if more than 2.5 pounds per acre of PENTAGON DG is applied to the onion crop; see the PENTAGON DG leaflet label for additional follow crop restrictions.

If loss of onion crop occurs due to adverse weather conditions, **DO NOT** replant any crop other than onions in muck soil during the same cropping year and **DO NOT** rework the soil deeper than 2 inches.

**DO NOT** use on muck soils in California.

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# GRAIN SORGHUM

PENTAGON DG or PENTAGON DG plus atrazine may be applied as a CULTI-SPRAY (post-emergence incorporated) application in grain sorghum grown in all states.

In addition, PENTAGON DG plus atrazine may be applied early postemergence in grain sorghum grown in states east of the Mississippi River and in Arkansas, East Texas, Louisiana, and the Missouri 'bootheel'.

## CULTI-SPRAY (POSTEMERGENCE INCORPORATED) For use in all states

### General Instructions

PENTAGON DG or PENTAGON DG plus atrazine tank mixtures applied as a CULTI-SPRAY (postemergence incorporated) treatment will control most late season annual grasses and certain broadleaf weeds in grain sorghum.

PENTAGON DG treatments can be applied from the 4-inch growth stage to as late as the last cultivation (layby) of grain sorghum.

PENTAGON DG plus atrazine must be applied before grain sorghum reaches 12 inches in height.

PENTAGON DG treatments will not control established weeds. DESTROY EMERGED WEEDS BY CULTIVATION PRIOR TO PENTAGON DG APPLICATION.

CULTI-SPRAY (postemergence incorporated) applications of PENTAGON DG or PENTAGON DG plus atrazine tank mixture can be applied in grain sorghum previously treated with herbicides registered for use in grain sorghum. Consult the labels of those herbicides for suggested treatments, rates to be used, and precautions or restrictions for use in grain sorghum and for Follow Crop Restrictions.

DO NOT APPLY PENTAGON DG in grain sorghum preplant incorporated or preemergence as serious crop injury can result.

DO NOT APPLY PENTAGON DG in grain sorghum which is planted in double row beds since this cultural practice does not permit adequate soil coverage of the bases of the grain sorghum plants with cultivation.

### CULTI-SPRAY (Postemergence Incorporated) APPLICATIONS PENTAGON DG alone or PENTAGON DG plus Atrazine Tank Mixtures

1. Cultivate with a sweep-type or rolling cultivator operated at sufficient speed to throw at least one inch of soil over the bases of the grain sorghum plants. This will kill small weed seedlings growing in the grain sorghum row and will prevent direct contact of the zone of brace root formation by PENTAGON DG during application.

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2. Apply broadcast with a ground sprayer when grain sorghum is at least 4 inches tall up to layby or last cultivation (atrazine must be applied before grain sorghum reaches 12 inches tall). Use drop nozzles if crop foliage will prevent uniform coverage of the soil surface within the rows.
  3. Thoroughly and uniformly incorporate PENTAGON DG treatments into the soil (1) with a sweep-type or rolling cultivator set to provide thorough incorporation in the top 1 inch of soil OR (2) with adequate irrigation water or rainfall. For best results, incorporate PENTAGON DG treatments as soon as possible after application. Incorporation must be completed within 7 days after application. If adequate moisture is not received within 7 days after application, incorporate PENTAGON DG with a sweep-type or rolling cultivator.

Under situations of low rainfall or soil moisture, when deep germinating weeds such as shattercane or field sandbur are anticipated, mechanical incorporation will provide best results.

If cultivation is needed after application and incorporation of PENTAGON DG, the depth of cut should be no deeper than the depth of cut used to incorporate.

DO NOT APPLY PENTAGON DG in grain sorghum more than once per crop season.

**Broadcast Rate Per Acre of PENTAGON DG CULTI-SPRAY  
(Postemergence Incorporated) in Grain Sorghum  
(Pounds per Acre)**

Soil Texture	Southern States <sup>1</sup>	Northern States <sup>1</sup>
Coarse	0.85 to 1.25 lbs	1.25 to 1.7 lbs
Medium	1.25 to 1.7 lbs	1.7 to 2.5 lbs
Fine	1.25 to 2.5 lbs	1.7 to 2.5 lbs

<sup>1</sup> SEE MAP AT END OF THIS LABEL FOR SPECIFIC STATES.

For PENTAGON DG plus atrazine tank mixtures, apply 1.0 lb a.i. per acre of atrazine. DO NOT apply tank mixture on coarse textured soils. †

NOTE: Livestock can graze or be fed forage from treated grain sorghum after 21 days following application. Observe all precautions, limitations, and follow crop restrictions on atrazine labels.

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**EARLY POSTEMERGENCE**

**For use in states east of the Mississippi River, plus Arkansas, East Texas,  
Louisiana, and the Missouri 'bootheel' only.**

**Application Instructions**

The seedbed should be firm and free of clods and trash. Use only where adequate tillage is practiced to provide good seed coverage. Plant grain sorghum AT LEAST 1 1/2 inches deep to ensure good seed coverage.

Uniformly apply PENTAGON DG plus atrazine tank mix treatment in water by ground equipment or by aircraft. Apply PENTAGON DG plus atrazine tank mixture only after grain sorghum has reached the 2-leaf stage and when weeds are no more than 1 inch tall.

DO NOT APPLY PENTAGON DG in grain sorghum preplant incorporated or preemergence as serious crop injury can result.

DO NOT apply in liquid fertilizer.

PENTAGON DG plus atrazine treatments are most effective in controlling weeds when adequate rainfall or overhead irrigation is received within 7 days after application. If cultivation is necessary because of soil crusting, soil compaction, or weed germination before rain or irrigation, use shallow tillage (such as a rotary hoe), and make certain grain sorghum seeds are below the tilled area. Wait 7 to 10 days after application before cultivating.

**Broadcast Rate per Acre for Early Postemergence  
Application of PENTAGON DG Plus Atrazine in Grain Sorghum**

<b>Soil Texture</b>	<b>PENTAGON DG + Atrazine</b>
Coarse	DO NOT USE
Medium	1.25 to 1.7 lbs + 1.0 to 1.2 lbs a.i.
Fine	1.7 lbs + 1.0 to 1.2 lbs a.i.

The high rate for each soil texture above should be used if heavy weed populations are anticipated.

NOTE: DO NOT replant grain sorghum if crop loss occurs due to weather conditions. Observe all precautions, limitations and follow crop restrictions on atrazine labels. Livestock can graze or be fed forage from PENTAGON DG plus atrazine treated grain sorghum fields after 21 days following application.

# NONBEARING FRUIT AND NUT CROPS AND VINEYARDS

## GENERAL INSTRUCTIONS

PENTAGON DG may be applied for preemergence control of most annual grasses and certain broadleaf weeds in several nonbearing fruit and nut crops and vineyards. PENTAGON DG may be used on the following nonbearing crops:

Almond	Peach
Apple	Pear
Apricot	Pistachio
Cherry	Plum
Citrus	Prune
Grape	English walnut
Nectarine	

PENTAGON DG treatments are most effective in controlling weeds when adequate rainfall or irrigation is received within 21 days after application.

### PRECAUTIONS:

Apply the spray directly to the ground beneath the trees or vines. DO NOT apply over the top of trees or vines with leaves or buds. Contact with leaves, shoots or buds by the spray mixture may cause malformed plant tissues.

DO NOT apply to newly transplanted trees or vines until ground has settled and no cracks are present.

DO NOT feed forage or graze livestock in treated fields.

FOR NEWLY TRANSPLANTED AND ONE YEAR OLD GRAPEVINES: Apply only to dormant grapevines. DO NOT apply if buds have started to swell. Application after buds have started to swell may result in leaf distortion.

### Use Methods and Timings

**Preemergence** - Uniformly apply in 20 or more gallons of water per acre (broadcast basis) with ground equipment. Applications may be band or broadcast.

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<b>PENTAGON DG Use Rates</b>
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Recommended use rates for PENTAGON DG alone and in tank mix applications are given in the following table.

**Broadcast Rate Per Acre of PENTAGON DG  
Preemergence in Nonbearing Fruit and Nut Crops  
and Vineyards  
(Pounds per Acre)**

Short-term control (4 months)	3.3 pounds
Long-term control (6 to 8 months)	6.6 pounds

<b>PENTAGON DG Tank Mixes</b>
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PENTAGON DG may be used in combination with a contact herbicide registered for use in the specific nonbearing crop to remove existing vegetation. Consult contact herbicide label for all directions, precautions and restrictions.

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# PEANUTS

## GENERAL INSTRUCTIONS

PENTAGON DG may be applied preplant incorporated in peanuts.

DO NOT use in California.

In the event of a crop loss due to weather conditions, peanuts or any crop registered for PENTAGON DG preplant incorporated use can be replanted without adverse effects the same year. If replanting is necessary, DO NOT rework the soil deeper than the treated zone.

## Use Methods and Timings

**Preplant Incorporated** - Apply PENTAGON DG up to 60 days prior to planting and incorporate within 7 days of application. Apply PENTAGON DG tank mixes as specified under the tank mix section.

## PENTAGON DG Use Rates in Peanuts

Recommended use rates for PENTAGON DG alone and in tank mix applications are given in the following table.

Broadcast Rate per Acre of PENTAGON DG in Peanuts  
(Pounds per Acre)

Region	Rate
Texas, Oklahoma and New Mexico	0.85 to 1.7 lbs/acre
Other peanut growing states	1.25 to 1.7 lbs/acre

For heavy weed infestations, especially of Texas panicum, up to 2.5 pounds of PENTAGON DG can be used in Alabama, Georgia or Florida.

## PENTAGON DG Tank Mixes in Peanuts

PENTAGON DG may be applied in a tank mix with PURSUIT, Dual or Vernam. Refer to the companion label for weeds controlled in addition to PENTAGON DG alone.

When using tank mixtures with PENTAGON DG, always read the companion product label(s) to determine the specific use rates by soil types, weed species, and weed or crop growth stage. In addition, follow all precautions and restrictions including state and local use restrictions that may apply to specific products. Always follow the most restrictive label.

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**Follow additional use directions in this table for PENTAGON DG tank mixes.  
(Refer to page 55 to determine PENTAGON DG use rate)**

<p>PENTAGON DG plus PURSUIT (4 oz/A) or PURSUIT DG (1.4 oz/A)</p>	<p><b>Preplant Incorporated</b> - Apply by ground equipment only up to 45 days prior to planting and incorporate within 7 days of application. If crop will be planted on beds, apply and incorporate after bed formation.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the PURSUIT label.</li> <li>• DO NOT apply tank mix preplant incorporated in West Texas, New Mexico and Arizona.</li> </ul>
<p>PENTAGON DG plus Dual (1.25 to 2.5 pts/A)</p>	<p><b>Preplant Incorporated</b> - Apply up to 14 days prior to planting and incorporate within 7 days of application. If crop will be planted on beds, apply and incorporate after bed formation.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Dual label.</li> </ul>
<p>PENTAGON DG plus Vernam 7E (2 1/3 to 3.0 pts/A)</p>	<p><b>Preplant Incorporated</b> - Apply with ground sprayer only up 10 days prior to planting. Incorporate IMMEDIATELY (within minutes) after application to prevent loss of Vernam herbicide. Whenever possible, application and incorporation should be done in the same operation.</p> <p><b>Incorporation Instruction</b> - Use power driven cultivation equipment set to cut to a depth of 2 to 3 inches or tandem disks set to cut to a depth of 4 to 6 inches, operated at 4 to 6 mph, followed by a spike-toothed harrow or some other leveling device which extends beyond the ends of the disks. For thorough mixing, disk in two different directions (cross disk). Prior to second disking, raise the disk to prevent cutting deeper than 4 to 6 inches.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Vernam label.</li> <li>• DO NOT plant seed deeper than 2 inches.</li> </ul>

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# POTATOES

## GENERAL INSTRUCTIONS

PENTAGON DG may be applied preemergence, preemergence incorporated or early postemergence in potatoes. DO NOT apply to sweet potatoes or yams. Apply to a seedbed which is firm and free of clods and trash.

DO NOT apply prior to planting crop.

PENTAGON DG treatments are most effective in controlling weeds when adequate rainfall or irrigation is received within 7 days of application.

DO NOT make more than one application of PENTAGON DG per season.

In the event of a crop loss due to weather conditions, any crop registered for PENTAGON DG preplant incorporated use can be replanted without adverse effects the same year. If replanting is necessary, DO NOT rework the soil deeper than the treated zone.

PENTAGON DG is not recommended for use on peat or muck soils.

## Use Methods and Timings

**Preemergence** - Apply PENTAGON DG after planting but before potatoes and weeds emerge or after drag-off where this operation is practiced. Apply PENTAGON DG tank mixes as specified under the tank mix section.

**Preemergence Incorporated** - Apply PENTAGON DG and incorporate after planting but before potatoes and weeds emerge. Where drag-off is practiced, apply PENTAGON DG and incorporate before, at or after drag-off but before potatoes and weeds emerge. Incorporate PENTAGON DG within 7 days of application. Apply PENTAGON DG tank mixes as specified under the tank mix section.

PENTAGON DG must be thoroughly and uniformly incorporated into the top 1 to 2 inches of soil. Care must be taken so that incorporation equipment does not damage seed pieces or elongating sprouts.

Mechanical incorporation is not required if adequate rainfall for good crop and weed emergence occurs or irrigation is received within 7 days after application.

**Early Postemergence** - Apply PENTAGON DG from crop emergence to the 6-inch stage of growth. DO NOT apply PENTAGON DG postemergence if potatoes are under stress from cold/wet or hot/dry conditions or crop injury may occur. PENTAGON DG treatments will not control established weeds. Emerged weeds must be destroyed prior to application. Apply PENTAGON DG tank mixes as specified under the tank mix section.

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**Sprinkler Irrigation Systems** - Apply PENTAGON DG alone preemergence after planting, but before potatoes and weeds have emerged, or after drag-off where this operation is practiced, or early postemergence through sprinkler irrigation systems. See **Chemigation** section for complete instructions (see table of contents for page number).

<b>PENTAGON DG Use Rates in Potatoes</b>
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Recommended use rates for PENTAGON DG alone and in tank mix applications are given in the following table.

**Broadcast Rate<sup>1</sup> per Acre of PENTAGON DG in Potatoes  
(Pounds per Acre)**

Soil Texture	< 3% Organic Matter	> 3% Organic Matter
Coarse	0.85 to 1.25 lbs	0.85 to 1.25 lbs
Medium	1.25 to 1.7 lbs	1.7 to 2.5 lbs
Fine	1.7 to 2.5 lbs	2.5 lbs

<sup>1</sup>USE THE HIGH RATE FOR PENTAGON DG ALONE APPLICATIONS.

<b>PENTAGON DG Tank Mixes in Potatoes</b>
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PENTAGON DG may be applied in a tank mix with Eptam, Lorox, Sencor/Lexone or Eptam plus Sencor/Lexone. Refer to the companion label for weeds controlled in addition to PENTAGON DG alone.

When using tank mixtures with PENTAGON DG, always read the companion product label(s) to determine the specific use rates by soil types, weed species, and weed or crop growth stage. In addition, follow all precautions and restrictions including state and local use restrictions that may apply to specific products. Always follow the most restrictive label.

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Follow additional use directions in this table for PENTAGON DG tank mixes.  
(Refer to page 58 to determine PENTAGON DG use rate)

<p>PENTAGON DG plus Eptam (3.0 to 3.5 pts/A)</p>	<p><b>Preemergence Incorporated</b> - Apply and incorporate after planting but before potatoes and weeds emerge. In areas where potatoes are normally dragged-off, apply and incorporate following drag-off but before potatoes and weeds emerge. Incorporate immediately after application.</p> <ul style="list-style-type: none"> <li>• <b>Incorporation Instructions</b> - Thoroughly and uniformly incorporate into the top 1 or 2 inches of soil. Whenever possible, application and incorporation should be done in the same operation. Care must be taken so that incorporation equipment does not damage seed pieces or elongating sprouts.</li> </ul> <p><b>Early Postemergence</b> - Apply through SPRINKLER IRRIGATION SYSTEMS ONLY from crop emergence to the 6-inch stage of growth. PENTAGON DG plus Eptam will not control established weeds. EMERGED WEEDS MUST BE DESTROYED PRIOR TO APPLICATION. DO NOT apply if potatoes are under stress from cold/wet or hot/dry conditions or crop injury may result.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Eptam label.</li> <li>• The Superior variety potato is sensitive to EPTAM and under stress conditions, early season stunting may occur.</li> <li>• For nutsedge control, use 4.5 to 7.0 pints of Eptam per acre.</li> </ul>
<p>PENTAGON DG plus Lorox L (1.5 to 4.0 lbs/A) or Lorox DF (1.5 to 4.0 lbs/A)</p> <p><b>For use on potatoes grown East of the Rocky Mountains only.</b></p>	<p><b>Preemergence</b> - Apply after planting but before potatoes and weeds emerge or after drag-off or hilling where these operations are practiced.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Lorox label.</li> <li>• Plant seed pieces at least two inches deep.</li> <li>• DO NOT use on sands and loamy sands (except in Wisconsin-Central Sands Area), gravelly soils or exposed subsoils or on soils containing less than 1% organic matter as injury to the treated crop or subsequent crops may result.</li> <li>• <b>Wisconsin-Central Sands Area Only:</b> PENTAGON DG plus Lorox tank mixture may be used on sands and loamy sands. Sands - apply 0.85 to 1.25 pounds of PENTAGON DG plus 1 pound of Lorox DF or 1 pint of Lorox L per acre. Loamy sand - apply 0.85 to 1.25 pounds of PENTAGON DG plus 2 pounds of Lorox DF or 2 pints of Lorox L per acre.</li> </ul>

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<p>PENTAGON DG plus Sencor DF/Lexone DF (0.33 to 0.67 lbs/A) or Sencor F (0.5 to 1.0 pt/A)</p>	<p><b>Preemergence</b> - Apply after planting but before potatoes and weeds emerge or after drag-off where this operation is practiced.</p> <p><b>Early Postemergence</b> - Apply from crop emergence to the 6-inch stage of growth. For optimum control of weeds apply before weeds are 1 inch tall. <b>DO NOT</b> apply within 24 hours of application of other pesticides. <b>DO NOT</b> apply within three days after periods of cool, wet or cloudy weather or crop injury may result. <b>DO NOT</b> use on early maturing, smooth-skinned white or red-skinned varieties of potatoes.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Sencor or Lexone label. Observe organic matter restrictions on the labels.</li> <li>• This combination may be applied through sprinkler irrigation systems.</li> </ul>
<p>PENTAGON DG plus Eptam (3.0 to 3.5 pts/A) plus Sencor/Lexone DF (0.33 to 0.67 lbs/A) or Sencor F (0.5 to 1.0 pt/A)</p> <p>DO NOT use in California.</p>	<p><b>Early Postemergence</b> - Apply through <b>SPRINKLER IRRIGATION SYSTEMS ONLY</b> from crop emergence to the 6-inch stage of growth. For optimum control of weeds apply before weeds are 1 inch tall.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Eptam and Sencor/Lexone labels. Observe organic matter restrictions on the Sencor/Lexone labels.</li> <li>• <b>DO NOT</b> apply within 24 hours of application of other pesticides.</li> <li>• <b>DO NOT</b> apply within three days after periods of cool, wet or cloudy weather or crop injury may result.</li> <li>• <b>DO NOT</b> use on early maturing, smooth-skinned white or red-skinned varieties of potatoes.</li> <li>• The Superior variety potato is sensitive to EPTAM and under stress conditions, early season stunting may occur.</li> <li>• <b>DO NOT</b> apply within 60 days of potato harvest.</li> <li>• For nutsedge control, use 4.5 to 7.0 pints of Eptam per acre.</li> </ul>
<p>PENTAGON DG plus Eptam (3.0 to 3.5 pts/A) plus Sencor/Lexone DF (0.33 to 0.67 lbs/A) or Sencor F (0.5 to 1.0 pt/A)</p> <p>For use in Idaho, Oregon and Washington only.</p>	<p><b>Preemergence</b> - Apply with <b>GROUND EQUIPMENT ONLY</b> after planting but before potatoes and weeds emerge.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Sencor or Lexone label. Observe organic matter restrictions on the labels.</li> <li>• The Superior variety potato is sensitive to EPTAM and under stress conditions, early season stunting may occur.</li> <li>• <b>DO NOT</b> make more than one application per season.</li> </ul>

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# RICE

## GENERAL INSTRUCTIONS

PENTAGON DG plus Facet 75 DF, Arrosolo or propanil may be applied as an early postemergence application in dry-seeded rice.

PENTAGON DG alone or in a tank mix with Facet 75 DF or glyphosate may be applied as a delayed preemergence application in drilled, dry-seeded rice.

DO NOT use in California.

DO NOT use on water-seeded rice, except as specified in other Cyanamid labeling.

This pesticide is toxic to fish and aquatic organisms. Fish may be killed at application rates recommended on the label. DO NOT contaminate water by cleaning of equipment or disposal of wastes.

DO NOT apply to rice fields if fields are used for fish production, especially catfish or crayfish farming.

DO NOT make more than one application of PENTAGON DG per season.

DO NOT bale or use rice straw from treated fields for feed or bedding.

DO NOT use water containing PENTAGON DG residues from rice cultivation to irrigate food or feed crops which are not registered for use with PENTAGON DG.

DO NOT plant crops in PENTAGON DG treated fields unless PENTAGON DG is registered for use on those crops.

In case of a crop failure due to weather conditions or disease following treatment with PENTAGON DG alone or in a tank mixture, only drilled dry-seeded rice may be immediately replanted; however, the grower assumes all risks and consequences associated with replanting of rice because there is the potential for stand reduction or stunting. A 10 percent increase in seeding rate is recommended. Replant seed below the herbicide layer because reduced stand or stunting may occur if PENTAGON DG contacts germinating rice seed. DO NOT replant with gibberellic acid-treated seed. DO NOT reapply PENTAGON DG alone or in a tank mixture.

When using tank mixes with PENTAGON DG, always read the companion product label(s) and follow all precautions and restrictions. Always follow the most restrictive label.

PENTAGON DG is not recommended for use on peat or muck soils.

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**Early Postemergence Applications  
in Dry Seeded Rice**

**PENTAGON DG plus Arrosolo or propanil**

PENTAGON DG plus Arrosolo or propanil are postemergence treatments that combine the direct contact action of propanil and the residual activity of PENTAGON DG. Since the residual activity of PENTAGON DG provides preemergence control of certain annual grasses which can germinate after this tank-mix treatment is applied, flooding after application can be delayed.

For maximum weed control with this treatment, it is important to carefully follow the directions below for (1) adequate spray coverage of weeds and soil and (2) proper timing of application, when barnyardgrass (watergrass) is in the 1 to 3 leaf stage of growth with an occasional 4 leaf plant (make application when sprangletop is less than 1/2 inch in height).

The seedbed should be firm and free of clods and trash. The seedbed must be prepared to allow for good seed coverage. Previous crop residues should be thoroughly mixed into the soil to a depth of 4 to 6 inches by plowing or disking before planting rice.

Uniformly apply recommended PENTAGON DG plus Arrosolo or PENTAGON DG plus propanil treatment by aircraft or ground equipment after rice emergence, according to spraying instructions on page 67, when barnyardgrass is in the 1 to 3 leaf growth stage with an occasional 4 leaf plant (make application when sprangletop is less than 1/2 inch). THE GROWER SHOULD INSPECT FIELDS FREQUENTLY TO CHECK GROWTH OF BARNYARDGRASS AND/OR SPRANGLETOP TO DETERMINE PROPER APPLICATION TIMING. Timing of applications should be based on the growth stage of barnyardgrass and/or sprangletop and not on the growth stage of rice. If rice is too small to maintain a flood on the field, the treatment can still be applied since flooding can be delayed because of the residual activity of PENTAGON DG.

While the residual activity of PENTAGON DG allows flooding to be delayed, proper water management practices must be followed for normal rice growth. Flooding should not be delayed if weeds begin to develop after application. Since soil and weeds must be completely exposed to spray coverage, no flood water should be on field at time of application. If necessary, fields may be flushed prior to treatment to produce vigorous rice and weed growth.

Since the residual activity of PENTAGON DG is activated by moisture, PENTAGON DG is most effective in controlling emerging weeds when adequate rainfall or irrigation (flush) is received within 7 days after application.

For maximum direct contact activity of propanil or Arrosolo, delay application if there is a chance of rain within 6 to 8 hours.

DO NOT apply this tank mixture within 14 days before or after insecticide applications because serious damage to rice may occur.

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Broadcast Rate per Acre of PENTAGON DG  
plus Arrosolo or Propanil  
Tank Mixtures in Rice  
(Pounds per Acre)

Soil Texture	PENTAGON DG	Arrosolo or Propanil <sup>1</sup>
Coarse	1.25 lbs	6.0 to 8.0 pts
Medium	1.25 to 1.7 lbs	6.0 to 8.0 pts
Fine	1.25 to 1.7 lbs	6.0 to 8.0 pts

<sup>1</sup>Based on 4 lb a.i. per gallon

**PENTAGON DG plus Facet 75 DF**

Use the high rate of Arrosolo or propanil if the following situations exist at the time of application: (1) unseasonably cool weather, (2) barnyardgrass has progressed to predominantly the 3 to 4 leaf stage, or (3) emerged sprangletop (less than 1/2 inch) is present.

PENTAGON DG plus Facet 75 DF herbicides may be tank mixed for early postemergence weed control in dry-seeded rice. This mixture will provide broad spectrum grass and certain broadleaf weed control, especially where sprangletop (*Leptochloa spp.*) is a problem.

Facet 75 DF will control the emerged grasses and broadleaves listed on its label. Refer to the Facet 75 DF label for weed size limitations. PENTAGON DG will provide residual control of labeled grass weeds which can germinate after this tank mixture is applied and which Facet 75 DF does not control.

For maximum weed control, it is important to carefully follow the directions below for (1) adequate spray coverage of weeds and soil and (2) proper timing of application. PENTAGON DG will not control emerged weeds. Facet 75 DF does not control sprangletop. Therefore, schedule spraying before sprangletop has emerged.

PENTAGON DG plus Facet 75 DF tank mixture may be applied early postemergence as follows:

1. Treatments may be applied to conventional, reduced or minimum tillage, and no-till (stale seed-bed) rice. The seedbed should be firm and free of clods. The seedbed must be prepared to allow for complete soil coverage of the rice seed. The use of a planter under conditions which do not allow good soil coverage of the rice seed can result in reduced stand or stunting if PENTAGON DG contacts germinating rice seed.
2. Apply when soil surface is dry, moist, or wet without standing water. If necessary, fields may be flushed prior to treatment to produce vigorous rice and weed growth. Since soil and weeds must be completely exposed to spray coverage, no flood water should be on the field at time of application. Cloddy soil, standing water (puddles) at the time of application, or cracks in the soil that form after application may result in reduced weed control.

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3. Uniformly apply the recommended PENTAGON DG plus Facet 75 DF treatment after rice emergence (spiking) and at the correct timing for Facet 75 DF, by aircraft or ground equipment according to spraying instructions on page 67. Refer to timing instructions and illustrations in the Facet 75 DF label. **THE GROWER SHOULD INSPECT FIELDS FREQUENTLY TO CHECK GROWTH OF SPRANGLETOP, OTHER LABELED WEEDS AND RICE TO DETERMINE PROPER APPLICATION TIMING.**
  4. For maximum direct contact activity of Facet 75 DF, delay application of the tank mix if there is a chance of rain within 6 to 8 hours.
  5. Because the residual activity of the PENTAGON DG plus Facet 75 DF allows for delayed flooding, this treatment may be applied if rice is too small to maintain a flood on the field for weed control. However, proper water management practices must be followed for normal rice growth and activity of PENTAGON DG and Facet 75 DF. Refer to the Water Management section of the Facet 75 DF label. Flooding should not be delayed if weeds begin to develop after application.

Since the residual activity of PENTAGON DG and Facet 75 DF is activated by moisture, the tank mix is most effective in controlling emerging weeds when adequate rainfall or irrigation (flush) is received within 3-7 days after application or when new grass/weeds have emerged and are less than one inch tall.

**Broadcast Rate per Acre of PENTAGON DG  
plus Facet 75 DF Early Postemergence  
Tank Mixture in Rice**

Soil Texture	PENTAGON DG (pounds)	Facet 75 DF (pounds)
Coarse	1.25	0.50
Medium	1.25 to 1.7	0.50
Fine	1.25 to 1.7	0.50

Use the higher rate of PENTAGON DG for each soil texture if heavy weed populations are anticipated

**Mixing Instructions**

Refer to the Facet 75 DF label for sections on mixing/spraying and on adjuvant for postemergence application. **ADDITION OF CROP OIL CONCENTRATE IS REQUIRED WITH FACET 75 DF APPLICATION. DO NOT** use liquid fertilizer solution. Add Facet 75 DF to a half-full spray tank of clean water with agitation running. After the Facet 75 DF is thoroughly mixed, add PENTAGON DG. Mix thoroughly and then add the recommended amount of crop oil concentrate (see Facet 75 DF label) and remaining volume of water. Constantly agitate during application.

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**Delayed (Late) Preemergence Applications**

PENTAGON DG herbicide alone, or a tank mixture of PENTAGON DG plus glyphosate herbicides, or a tank mixture of PENTAGON DG plus Facet 75 DF herbicides may be applied for delayed (late) preemergence weed control in grain-drilled, dry-seeded rice.

The tank mixtures will provide broad spectrum grass and certain broadleaf weed control. Tank mixtures are especially effective where sprangletop (*Leptochloa* spp.) is a problem. PENTAGON DG alone will not control broadleaf weeds; a postemergence application of propanil, Arrosolo, Bolero, Facet 75 DF or Londax herbicide may be necessary for season-long weed control.

Glyphosate or Facet 75 DF will control the emerged grasses and broadleaves listed on their label. PENTAGON DG will provide residual control of labeled grass weeds which can germinate after the tank-mixture is applied and which Facet 75 DF does not control. PENTAGON DG will not control emerged weeds. Facet 75 DF does not control sprangletop. Therefore, schedule spraying before sprangletop has emerged.

For maximum weed control and rice stand, it is important to carefully follow the directions below for (1) adequate spray coverage of soil and (2) proper timing of application.

1. Treatments may be applied to conventional, reduced or minimum tillage, and no-till (stale seed-bed) rice. The seedbed should be firm and free of clods, and must be prepared to allow for good seed coverage. Plant rice with a grain drill at a depth that provides complete soil coverage of the rice seed. The use of a planter under conditions which do not allow good soil coverage of the rice seed can result in reduced stand or stunting if PENTAGON DG contacts germinating rice seed.
2. Apply PENTAGON DG alone or in tank mixture to levees after the levees are pulled and planted. Exposed seeds that come in contact with PENTAGON DG or Facet 75 DF may be injured.
3. Uniformly apply the recommended PENTAGON DG plus glyphosate after rice planting (as described below) and before rice emergence (spiking), by aircraft or ground equipment according to spraying instructions on page 67. **THE GROWER SHOULD INSPECT FIELDS FREQUENTLY TO CHECK GROWTH OF RICE TO DETERMINE PROPER APPLICATION TIMING.**

Uniformly apply the recommended rate of PENTAGON DG alone or PENTAGON DG plus Facet 75 DF after rice planting (as described below) and before rice and weed emergence (spiking), by aircraft or ground equipment according to spraying instructions on page 68. **THE GROWER SHOULD INSPECT FIELDS FREQUENTLY TO CHECK GROWTH OF RICE AND WEEDS TO DETERMINE PROPER APPLICATION TIMING.**

4. Apply **ONLY** when growing conditions favor vigorous rice growth. The seedbed should have adequate moisture for seed germination. If there is insufficient moisture, **flushing is recommended before PENTAGON DG application** to supply moisture for root (radicle) initiation and for vigorous rice and weed growth.

**DO NOT** apply PENTAGON DG and then flush for germination. **DO NOT** apply to stressed rice. Stress factors include cold or hot temperature extremes, excessive moisture or drought, problem soils, poor field drainage or deep water after application. **DO NOT** apply early preemergence nor preplant incorporated as severe rice injury is possible.

- 5. Apply when soil surface is dry, moist, or wet without standing water. Since soil and weeds (only for glyphosate) must be completely exposed to spray coverage, no flood water should be on the field at time of application. Cloddy soil, standing water (puddles) at the time of application, or cracks in the soil that form after application may result in reduced weed control.
- 6. Apply after the rice seed has absorbed water and germinated and after the soil has been previously sealed over the seed by at least 1 inch of rainfall or by irrigation (flush). If the soil has not been sealed by rain or flush, apply when 80 percent of germinated seeds have a primary root (radicle) or shoot at least 1/2 inch long.

If applied to soil prior to these conditions, or to cracked soil, then stand reduction or stunting of rice may occur; Facet 75 DF may cause buggywhipping. Under some conditions, use of gibberellic acid-treated seed, **HEAVY RAINFALL AFTER APPLICATION, OR FLUSHING AFTER APPLICATION** may result in herbicide injury to rice. Rice can overcome moderate injury with appropriate cultural practices.

- 7. For maximum direct contact activity of glyphosate, delay application of the tank mix if there is a chance of rain within 6 or 8 hours.
- 8. Because the residual activity of PENTAGON DG alone or the PENTAGON DG plus Facet 75 DF tank mix allows for delayed flooding, this treatment may be applied if rice is too small to maintain a flood on the field for weed control. However, proper water management practices must be followed for normal rice growth and activity of PENTAGON DG and Facet 75 DF. Refer to the Water Management section of the Facet 75 DF label. Flooding should not be delayed if weeds begin to develop after application.

Since the residual activity of PENTAGON DG and Facet 75 DF is activated by moisture, PENTAGON DG alone is most effective in controlling emerging weeds when adequate rainfall or irrigation (flush) is received within 7 days after application. The PENTAGON DG plus Facet 75 DF tank mix is most effective in controlling emerging weeds when adequate rainfall or irrigation (flush) is received within 3-7 days after application or when new grass/weeds have emerged and are less than one inch tall.

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**Broadcast Rate per Acre of PENTAGON DG Alone or  
PENTAGON DG plus Facet 75 DF or PENTAGON DG plus Glyphosate  
Tank Mixture for Delayed Preemergence Application in Rice**

<b>Soil Texture</b>	<b>PENTAGON DG (pounds)</b>	<b>Facet 75 DF (pounds)</b>
Sands, loamy sands	DO NOT USE	DO NOT USE
Sandy loams	1.25	0.33 to 0.44
Loams, silt loams, silts, sandy clay loams	1.25 to 1.7	0.44 to 0.5
Silty clay loams, clay loams, sandy clays, silty clays, clays	1.25 to 1.7	0.5 to 0.67

Use the higher rate of PENTAGON DG for each soil texture if heavy weed populations are anticipated

See the glyphosate label for recommended rates.

**Mixing Instructions**

**PENTAGON DG plus glyphosate tank mix.** Refer to Mixing Instructions in the PENTAGON DG leaflet label and to Mixing, Additives and Application Instructions in the glyphosate label. **ADDITION OF NONIONIC SURFACTANT MAY BE REQUIRED WITH GLYPHOSATE APPLICATION** (see product label) and use of ammonium sulfate may increase performance.

**PENTAGON DG plus Facet 75 DF tank mix.** Refer to the PENTAGON DG and Facet 75 DF labels for sections on mixing and spraying. **DO NOT** use liquid fertilizer solution. Add Facet 75 DF to a half-full spray tank of clean water with agitation running. After the Facet 75 DF is thoroughly mixed, add PENTAGON DG. Mix thoroughly and then add the remaining volume of water. Constantly agitate during application.

<b>Spraying Instructions</b>
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Spray drift can cause injury to sensitive crops. See the propanil or Arrosolo, Facet 75 DF and glyphosate labels for sensitive crops; follow all recommendations to minimize drift.

DO NOT apply PENTAGON DG through any type of irrigation system.

DO NOT apply in liquid fertilizer.

**Aerial Applications**

For aerial application, apply the recommended rate in 5 to 10 (10 to 12 for propanil and Arrosolo) gallons of water per acre to ensure adequate coverage. To minimize drift, DO NOT apply during periods of gusty winds or when wind conditions favor drifting. It is recommended that a flagman or an automatic mechanical flagging unit on the aircraft be used to avoid overlapping and possible crop injury.

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**Ground Applications**

For ground equipment, apply the recommended rate in 10 to 20 (15 to 25 for propanil and Arrosolo) gallons of water per acre to ensure adequate coverage. Use a properly calibrated low-pressure (20 to 40 psi) sprayer equipped with 8002 or larger size Tee-Jet or comparable nozzles to achieve uniform spray distribution and minimize drift. Keep the bypass line on or near the bottom of the tank to minimize foaming. Nozzle screens must be no finer than 50 mesh. DO NOT apply PENTAGON DG during periods of gusty winds or when wind velocity is greater than 20 mph.

# SOYBEANS

## GENERAL INSTRUCTIONS

PENTAGON DG may be applied in conventional, minimum or no-till as a preplant surface, preplant incorporated or preemergence application in soybeans.

**DO NOT APPLY POSTEMERGENCE or serious crop injury can result.**

**DO NOT make applications of PENTAGON DG preemergence north of Interstate 80, except as specified in other supplemental Cyanamid labeling.**

DO NOT use PENTAGON DG in soybeans in California.

Preplant surface and preemergence treatments are most effective in controlling weeds when adequate rainfall or overhead irrigation is received within 7 days after application. If moisture is insufficient to activate PENTAGON DG, a shallow cultivation (preferably with a rotary hoe) should be made after emergence of soybeans, but while weeds are small enough to be controlled by mechanical cultivation. Otherwise, the use of a postemergence herbicide treatment may be required to control weed escapes at planting or following soybean emergence.

In the event of a crop loss due to weather conditions, soybeans or any crop registered for preplant incorporated use can be replanted without adverse effects the same year. If replanting is necessary, DO NOT rework the soil deeper than the treated zone.

Livestock can graze or be fed forage from treated soybean fields.

PENTAGON DG is not recommended for use on peat or muck soils.

## Use Methods and Timings

**Preplant Surface** - Apply PENTAGON DG up to 15 days prior to planting. PENTAGON DG may be applied up to 45 days prior to planting when used in a tank mix or applied sequentially with PURSUIT or SCEPTER herbicides. Preplant surface applications of PENTAGON DG alone should be followed by a postemergence program using PURSUIT herbicide. Apply PENTAGON DG tank mixes and sequential programs as specified under the tank mix section.

**Preplant Incorporated** - Apply PENTAGON DG up to 60 days prior to planting and incorporate within 7 days of application. Apply PENTAGON DG tank mixes and sequential programs as specified under the tank mix section.

**Preemergence** - Apply PENTAGON DG at planting or up to 2 days after planting. Apply to a seedbed which is firm and free of clods. **DO NOT make applications of PENTAGON DG preemergence north of Interstate 80, except as specified in other supplemental Cyanamid labeling.** Apply PENTAGON DG tank mixes and sequential programs as specified under the tank mix section.

DO NOT apply PENTAGON DG postemergence or serious crop injury can result.

**PENTAGON DG Use Rates in Soybeans**

Recommended use rates for PENTAGON DG alone and in tank mix combinations or sequential applications with other herbicides are given in the following tables.

**Broadcast Rate Per Acre of PENTAGON DG  
Preplant Surface or Preplant Incorporated in Soybeans  
(Pounds per Acre)**

Soil Texture	< 3% Organic Matter	> 3% Organic Matter
Coarse	0.85 to 1.25 lbs	1.7 lbs
Medium	1.25 to 2.1 <sup>1</sup> lbs	2.1 to 2.5 lbs
Fine	1.7 to 2.5 lbs	2.5 lbs

DO NOT EXCEED 2.1 LBS/A FOR SOUTHERN STATES. SEE MAP AT THE END OF THIS LABEL FOR SPECIFIC STATES.

For heavy clay soils, apply PENTAGON DG at the broadcast rate of 2.5 pounds per acre.

The high rates for each soil texture above should be used if heavy weed populations are anticipated, extensive crop residues were present prior to seedbed preparation or in no-till.

**Broadcast Rate Per Acre of PENTAGON DG  
Preemergence in Soybeans  
(Pounds per Acre)**

Soil Texture	< 3% Organic Matter	> 3% Organic Matter
Coarse	0.85 to 1.25 lbs	1.25 lbs
Medium	1.25 to 1.7 lbs	1.25 to 1.7 lbs
Fine	1.25 to 1.7 lbs	1.7 to 2.1 lbs

The high rates for each soil texture above should be used if heavy weed populations are anticipated, extensive crop residues were present prior to seedbed preparation or in no-till.

**PENTAGON DG Tank Mixes and Sequential Programs in Soybeans**

PENTAGON DG may be applied in a tank mix with PURSUIT, SCEPTER, Command, Canopy, Dual, Lasso, Lorox, Lorox Plus, Preview, and Sencor/Lexone. PENTAGON DG may be applied in a sequential application with PURSUIT, SCEPTER, SCEPTER O.T., Lorox and Sencor/Lexone. Refer to the companion label for weeds controlled in addition to PENTAGON DG alone.

When using tank mixtures or sequential applications with PENTAGON DG, always read the companion product label(s) to determine the specific use rates by soil types, weed species, and weed or crop growth stage. In addition, follow all precautions and restrictions including state and local use restrictions that may apply to specific products. Always follow the most restrictive label.

For no-till, PENTAGON DG alone or PENTAGON DG tank mixes may be used with Gramoxone Extra, Roundup, 2-4,D or Butyrac 200 (2,4-DB) to kill existing vegetation, if present prior to planting. Refer to these labels for specific use recommendations, restrictions, rates and weeds controlled. PENTAGON DG alone will control weeds as they germinate, but it will not control emerged weeds.

**Follow additional use directions in this table for PENTAGON DG tank Mixes  
(Refer to page 70 to determine PENTAGON DG use rate)**

<p>PENTAGON DG plus PURSUIT (4 oz/A) or PURSUIT DG (1.4 oz/A)</p>	<p><b>Preplant Surface</b> - Apply up to 45 days prior to planting.</p> <p><b>Preplant Incorporated</b> - Apply up to 45 days prior to planting and incorporate within 7 days of application.</p> <p><b>Preemergence</b> - Apply at planting or up to 2 days after planting before weeds and crops emerge.</p> <p><b>Preplant Surface, preplant incorporated or preemergence followed by Early Postemergence</b> - Apply PENTAGON DG as described above. Follow with an early postemergence treatment of PURSUIT as directed on the PURSUIT label.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the PURSUIT label.</li> <li>• Preplant surface applications of PENTAGON DG alone should be followed by a postemergence program using PURSUIT herbicide.</li> <li>• DO NOT graze or feed treated soybean forage, hay or straw to livestock.</li> </ul>
<p>PENTAGON DG plus SCEPTER (0.67 pt/A) or SCEPTER 70DG (2.8 oz/A)</p>	<p><b>Preplant Surface</b> - Apply up to 45 days prior to planting.</p> <p><b>Preplant Incorporated</b> - Apply up to 45 days prior to planting (30 days in Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee and Texas) and incorporate within 7 days of application.</p> <p><b>Preemergence</b> - Apply at planting or up to 2 days after planting before weeds and crops emerge.</p> <p><b>Preplant Surface, preplant incorporated or preemergence followed by Early Postemergence</b> - Apply PENTAGON DG as described above. Follow with an early postemergence treatment of SCEPTER as directed on the SCEPTER label.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the SCEPTER label.</li> <li>• DO NOT graze or feed treated soybean forage, hay or straw to livestock.</li> </ul>



<p>PENTAGON DG followed by SCEPTER O.T. (1.0 pt/A)</p>	<p><b>Preplant Surface followed by Early Postemergence</b> - Apply PENTAGON DG up to 15 days prior to planting. Follow with an early postemergence treatment of SCEPTER O.T. as directed on the SCEPTER O.T. label.</p> <p><b>Preplant Incorporated followed by Early Postemergence</b> - Apply PENTAGON DG up to 60 days prior to planting and incorporate within 7 days of application. Follow with an early postemergence treatment of SCEPTER O.T. as directed on the SCEPTER O.T. label.</p> <p><b>Preemergence followed by Early Postemergence</b> - Apply PENTAGON DG at planting or up to 2 days after planting. Follow with a postemergence treatment of SCEPTER O.T. as directed on the SCEPTER O.T. label.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the SCEPTER O.T. label.</li> </ul>
<p>PENTAGON DG plus Command 4EC (0.75 to 1.5 pts/A)</p>	<p><b>Preplant Incorporated</b> - Apply to the soil surface and uniformly incorporate. See the Command label for incorporation requirements and instructions.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Command label.</li> <li>• Apply with calibrated ground equipment in 10 to 40 gallons of water per acre. The use of an agriculturally approved drift reduction agent is required at finished spray volumes of 10 to 15 gallons per acre.</li> <li>• Do not apply this tank mix to overly moist or wet soils.</li> <li>• Command is a volatile compound. Off-site movement of spray drift or vapors of Command can cause foliar whitening or yellowing of some plant parts.</li> <li>• DO NOT allow livestock to graze on soybean vines or use the vines for feed. Cover crops may be planted anytime but stand reductions may occur. DO NOT graze or use the cover crop for feed.</li> </ul>
<p>PENTAGON DG plus Canopy (6 to 12 ozs/A)</p>	<p><b>Preplant Surface</b> - Apply up to 30 days before planting.</p> <p><b>Preplant Incorporated</b> - Apply up to 14 days prior to planting and incorporate within 7 days of application.</p> <p><b>Preemergence</b> - Apply at planting or up to 2 days after planting before weeds and crops emerge.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Canopy label. Observe all soil type, soil pH and soybean variety restrictions.</li> <li>• DO NOT apply to soils with less than 0.5% organic matter.</li> <li>• Continuous agitation in the spray tank is required to keep the material in suspension.</li> <li>• Avoid overlap and shut off spray booms while starting, turning, slowing or stopping, or crop injury may result.</li> </ul>

<p>PENTAGON DG plus Dual (1.5 to 3.0 pts/A)</p>	<p><b>Preplant Surface</b> - Apply up to 15 days before planting.</p> <p><b>Preplant Incorporated</b> - Apply up to 14 days prior to planting and incorporate within 7 days of application. Use a preplant incorporated application if furrow irrigation is used or when a period of dry weather after application is expected. If soybeans are planted on beds, apply and incorporate after bed formation.</p> <p><b>Preemergence</b> - Apply at planting or up to 2 days after planting before weeds and crops emerge.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Dual label.</li> </ul>
<p>PENTAGON DG plus Lasso (2.5 to 4.0 qts/A)</p>	<p><b>Preplant Surface</b> - Apply up to 15 days before planting.</p> <p><b>Preplant Incorporated</b> - Apply up to 7 days prior to planting and incorporate within 7 days of application.</p> <p><b>Preemergence</b> - Apply at planting or up to 2 days after planting before weeds and crops emerge. This treatment must be applied within 5 days of the last preplant tillage.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Lasso label.</li> <li>• Apply with ground equipment.</li> <li>• Incorporation on coarse soils may reduce length of control due to leaching of Lasso with rainfall or irrigation.</li> <li>• Incorporation is not recommended on coarse soils in the Southeastern States</li> <li>• High intensity or excessive rainfall or excessive irrigation after preemergence application may reduce weed control.</li> </ul>
<p>PENTAGON DG plus Lorox DF (1.0 to 2.5 lbs/A) or Lorox L (1.0 to 2.5 pts/A)</p>	<p><b>Preplant Surface</b> - Apply up to 15 days before planting.</p> <p><b>Preplant Incorporated followed by Preemergence</b> - Apply PENTAGON DG up to 60 days prior to planting and incorporate within 7 days of application. Follow with a preemergence treatment of Lorox as directed on the Lorox label.</p> <p><b>Preemergence</b> - Apply at planting or up to 2 days after planting before weeds and crops emerge.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Lorox label.</li> <li>• Do not use on sands, loamy sands, gravelly soils or soils containing less than 1/2% organic matter.</li> </ul>

<p>PENTAGON DG plus Lorox Plus (12 to 18 ozs/A)</p>	<p><b>Preplant Surface</b> - Apply up to 30 days before planting.</p> <p><b>Preplant Incorporated</b> - Apply up to 30 days prior to planting and incorporate within 7 days of application.</p> <p><b>Preemergence</b> - Apply at planting or up to 2 days after planting before weeds and crops emerge.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Lorox Plus label. Observe all soil type, soil pH and soybean variety restrictions.</li> <li>• DO NOT apply to soils with less than 0.5% organic matter.</li> <li>• Continuous agitation in the spray tank is required to keep the material in suspension.</li> <li>• Avoid overlap and shut off spray booms while starting, turning, slowing or stopping, or crop injury may result.</li> </ul>
<p>PENTAGON DG plus Preview (6 to 10 ozs/A)</p>	<p><b>Preplant Surface</b> - Apply up to 30 days before planting.</p> <p><b>Preplant Incorporated</b> - Apply up to 14 days prior to planting and incorporate within 7 days of application.</p> <p><b>Preemergence</b> - Apply at planting or up to 2 days after planting before weeds and crops emerge.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Preview label. Observe all soil type, soil pH and soybean variety restrictions.</li> <li>• DO NOT apply to soils with less than 0.5% organic matter.</li> <li>• Continuous agitation in the spray tank is required to keep the material in suspension.</li> <li>• Avoid overlap and shut off spray booms while starting, turning, slowing or stopping, or crop injury may result.</li> </ul>
<p>PENTAGON DG plus Sencor/Lexone DF (0.33 to 0.67 lbs/A) or Sencor F (0.5 to 1.0 p/A)</p>	<p><b>Preplant Surface</b> - Apply up to 15 days before planting.</p> <p><b>Preplant Incorporated</b> - Apply up to 7 days prior to planting and incorporate within 7 days of application.</p> <p><b>Preplant Incorporated followed by Preemergence</b> - Apply PENTAGON DG up to 60 days prior to planting and incorporate within 7 days of application. Follow with a preemergence treatment of Sencor/Lexone as directed on the Sencor or Lexone label.</p> <p><b>Preemergence</b> - Apply at planting or up to 2 days after planting before weeds and crops emerge.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and instructions on the Sencor/Lexone label. Observe all soil type, soil pH, soybean variety and incorporation restrictions.</li> <li>• DO NOT use on sands. DO NOT use on loamy sands or on sandy loams that contain less than 0.5% organic matter as crop injury may result. This tank mixture is not recommended for use on soils with less than 2% organic matter in the Coastal Plain of New Jersey or the Delmarva Peninsula.</li> <li>• Soybean seed should be planted at least 1.5 inches below the soil surface.</li> <li>• If replanting is necessary, DO NOT rework the soil.</li> </ul>

**Special Weeds**

**1. Shattercane/Woolly Cupgrass**

Preplant incorporated treatments of PENTAGON DG alone, PENTAGON DG plus SCEPTER or PENTAGON DG plus Sencor/Lexone preplant incorporated tank mixtures, or preplant incorporated PENTAGON DG applications followed by registered sequential preemergence or postemergence herbicides will control shattercane (wild cane) (*Sorghum bicolor*).

Preplant incorporated treatments of PENTAGON DG plus PURSUIT or preplant incorporated PENTAGON DG applications followed by an early postemergence application of PURSUIT herbicide or other registered sequential preemergence or postemergence herbicides will control woolly cupgrass (*Eriochloa villosa*).

Shattercane and woolly cupgrass are difficult to control in many soybean growing areas because of their ability to germinate from a greater depth in the soil than most other weeds. Shattercane and woolly cupgrass can emerge throughout the growing season depending on soil temperature, moisture, and seed dormancy.

Thoroughly mix previous crop residues into the soil and destroy any existing vegetation prior to herbicide application. Apply PENTAGON DG or PENTAGON DG combinations at the recommended rates listed in the following tables. See **Incorporation Instructions** section (see table of contents for page number) for incorporation directions. Thoroughly and uniformly mechanically incorporate PENTAGON DG into TOP 2 INCHES of soil. Acceptable results CANNOT be expected if PENTAGON DG is applied preemergence. Cultivation may be necessary to control escapes and late germinating shattercane or woolly cupgrass during the crop season.

**Broadcast Rate Per Acre of PENTAGON DG Preplant Incorporated  
for Control of Shattercane or Woolly Cupgrass in Soybeans  
(Pounds per Acre)**

Soil Texture	< 3% Organic Matter	> 3% Organic Matter
Coarse	1.7 lbs	1.7 lbs
Medium	2.1 lbs	2.5 lbs
Fine	2.5 lbs	2.5 lbs

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**Broadcast Rate Per Acre of PENTAGON DG Plus Sencor/Lexone  
Preplant Incorporated Tank Mixture for  
Control of Shattercane in Soybeans<sup>1</sup>**

Soil Texture <sup>2</sup>	PENTAGON DG + Sencor/Lexone DF 0.5 % to 3% Organic Matter	PENTAGON DG + Sencor/Lexone DF More than 3% Organic Matter
Coarse	1.25 lbs + 0.5 lb.	1.25 lbs + 0.5 lb.
Medium	1.7 lbs + 0.5 lb.	1.7 lbs + 0.5 to 0.67 lb.
Fine	1.7 lbs + 0.5 to 0.67 lb.	2.1 lbs + 0.67 lb.

<sup>1</sup> Read and strictly follow all precautions and instructions on the Sencor/Lexone label. Observe all soil type, soil pH and soybean variety restrictions.

<sup>2</sup> DO NOT USE on sands. DO NOT USE on loamy sands or on sandy loams that contain less than 1% organic matter, or on other soils with less than 1/2% organic matter as crop injury may result.

**2. Red Rice, Itchgrass**

PENTAGON DG applied preplant incorporated will provide control of red rice (*Oryza sativa*) and aid in the control of and reduce competition from itchgrass (*Rottboellia exaltata*) at the rates listed in the following table.

**Broadcast Rate Per Acre of PENTAGON DG Preplant Incorporated  
for Control of Red Rice and Suppression of Itchgrass in Soybeans  
(Pounds per Acre)**

Soil Texture	Up to 3% Organic Matter <sup>1</sup>
Coarse	1.7 to 2.5 <sup>2</sup> lbs
Medium	2.5 lbs
Fine	3.3 lbs

<sup>1</sup> This use is not recommended for soils with more than 3% organic matter.

<sup>2</sup> The higher rate should be used if heavy red rice or itchgrass populations are anticipated.

NOTE: Livestock can graze or be fed forage from treated soybean fields. If soybean crop loss occurs due to weather conditions, cotton or soybeans can be replanted the same year into treated soil without adverse effects. If replanting is necessary, DO NOT rework the soil deeper than the treated zone.

**3. Rhizome Johnsongrass**

PENTAGON DG applied preplant incorporated for two consecutive years will provide control of rhizome johnsongrass (*Sorghum halepense*) in soybeans at the rates recommended for soil textures listed in the following table. This use is not recommended for Arizona, New Mexico and California. Rhizome johnsongrass will be suppressed after the first year and controlled after the second year.

Before application, use a chisel plow or similar implement to bring johnsongrass rhizomes to the surface. Chop rhizomes into small pieces with a disk harrow set to cut 4 to 6 inches deep and operated in two different directions at 4 to 6 mph.

PENTAGON DG is to be incorporated into the soil within 7 days after application prior to planting. For maximum control of rhizome johnsongrass, incorporate PENTAGON DG as soon as possible after application. Deep and thorough incorporation of PENTAGON DG is necessary for control of rhizome johnsongrass. Mechanical incorporation can be achieved by the following methods:

- (a) Disk harrow set to cut 4 to 6 inches deep and operated in two different directions at 4 to 6 mph.
- (b) PTO-driven equipment (tillers, cultivators, hoes) set to cut 3 to 4 inches deep and operated one time at 4 mph or less.

For johnsongrass escapes during the crop season, cultivation and/or application of registered postemergence herbicides are recommended. Follow the directions for use on the labels of the respective herbicides.

**Broadcast Rate Per Acre of PENTAGON DG Preplant Incorporated  
for Control of Rhizome Johnsongrass  
APPLY FOR TWO CONSECUTIVE YEARS  
(Pounds per Acre)**

Soil Texture	Up to 3% Organic Matter <sup>1</sup>
Coarse	1.7 lbs
Medium	2.5 lbs
Fine	3.3 lbs

<sup>1</sup> This use is not recommended for soils with more than 3% organic matter.

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**SUGARCANE<sup>®</sup>**  
**(except Hawaii)**

**GENERAL INSTRUCTIONS**

PENTAGON DG may be applied to newly planted or ratoon sugarcane preemergence through layby and again in late summer or early fall to the newly planted sugarcane.

DO NOT apply through irrigation systems on sugarcane.

DO NOT make aerial applications at close-in because complete and uniform coverage cannot be obtained.

DO NOT apply more than 10 pounds per acre of PENTAGON DG during one growing season.

PENTAGON DG is not recommended for use on peat or muck soils.

DO NOT apply within 90 days of harvest.

DO NOT graze treated fields or feed treated forage or fodder to livestock.

**Use Methods and Timings**

PENTAGON DG may be applied preemergence through layby, to newly planted or ratoon sugarcane, and again in late summer or early fall to the newly planted sugarcane. Applications may be made band or broadcast. Although there may be adequate crop tolerance for postemergence applications at layby, the spray must be directed under the sugarcane canopy in order to obtain effective weed control.

**PENTAGON DG Use Rates**

**Broadcast Rate of PENTAGON DG for use in Sugarcane (except Hawaii)**

Apply 3.3 to 5 pounds of PENTAGON DG but DO NOT exceed 10 pounds per acre in one growing season. See spraying instructions for calculation of band treatment rate.

Use the 5 pound rate:

- a. heavy clay soils;
- b. if no mechanical incorporation is planned;
- c. if heavy weed populations are anticipated;
- d. if itchgrass infestation is anticipated;
- e. or if no shaving is planned.