



## DANGER

Can Kill If Swallowed. May be Harmful or Fatal If Absorbed Through Skin or Inhaled. Harmful to Skin and Eyes.

### STATEMENT OF PRACTICAL TREATMENT

#### IF SWALLOWED

IMMEDIATELY induce vomiting by inserting finger in throat. Administer fluids and induce further vomiting. Get to a hospital or physician fast. PROMPT TREATMENT IS ESSENTIAL and must be initiated before signs and symptoms of injury appear. Note to Physicians: Call ICI Americas Inc. 302/575-3000 at any hour to obtain toxicology and medical management consultation, a supply of bentonite clay, and paraquat analysis. Symptoms following ingestion may be delayed up to 3 days. To be effective, treatment for paraquat poisoning must begin IMMEDIATELY. Treatment consists of binding paraquat in the gut with suspensions of bentonite clay or charcoal and removal of paraquat from the blood by prolonged charcoal hemoperfusion or continuous hemodialysis.

#### SKIN CONTACT

IMMEDIATELY wash with soap and water. Remove and wash all contaminated clothing with soap and hot water before reuse. Prolonged contact will cause severe irritation. Contact with irritated skin, or a cut, or repeated contact with intact skin may result in poisoning.

#### EYE CONTACT

IMMEDIATELY wash eyes with water for at least 15 minutes and get medical attention. Contact may cause eye injury.

#### INHALATION

IMMEDIATELY get away from spray mist. Exposure may cause irritation, nose bleeds and may lead to poisoning. Stop and check spray procedure. Follow Worker Safety Rules on side panel.

CONDITIONS OF SALE: 1. ICI Americas Inc. (ICIA) warrants that this material conforms to the chemical description on the label and is reasonably fit for use as directed hereon. ICIA neither makes, nor authorizes any agent or representative to make, any other warranty of FITNESS or of MERCHANTABILITY, guarantee or representation, express or implied, concerning this material.  
2. Critical and unforeseeable factors beyond ICIA's control prevent it from eliminating all risks in connection with the use of chemicals. Such risks include, but are not limited to, damage to plants and crops to which the material is applied, lack of complete control, and damage caused by drift to other plants or crops. Such risks occur even though the product is reasonably fit for the uses stated hereon and even though label directions are followed. Buyer and user acknowledge and assume all risks and liability (except those assumed by ICIA under 1 above) resulting from handling, storage and use of this material.

## POISON

DO NOT REMOVE CONTENTS EXCEPT FOR IMMEDIATE USE.



NEVER PUT INTO FOOD, DRINK OR OTHER CONTAINERS.

READ DANGER STATEMENTS AND WORKER SAFETY RULES ON SIDE PANELS.

**PELIGRO—PRECAUCION AL USUARIO:**

Si usas no los ingles, no use este producto hasta que la etiqueta le haya sido explicada ampliamente.

**A Weed and Grass Killer — Harvest Aid Chemical**

Contains Stench (Odor) and Emetic

### RESTRICTED USE PESTICIDE

For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

Active Ingredient:	By Wt.
Paraquat dichloride (7,7'-Dibutyl-4,4'-bipyridinium dichloride) .....	20.4 %
Inert Ingredients: .....	79.6 %
Total .....	100.0%

Contains 1.5 lb Paraquat active per gallon.

KEEP OUT OF REACH OF CHILDREN.  
DO NOT USE OR STORE IN OR AROUND THE HOME.

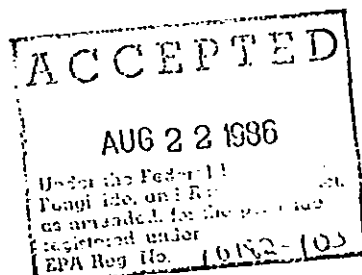


## DANGER:

**ONE SWALLOW CAN KILL!**

SYMPTOMS ARE PROLONGED AND PAINFUL. ONSET OF SYMPTOMS MAY BE DELAYED FOR UP TO 3 DAYS AFTER SWALLOWING.

NET CONTENTS



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#### DIRECTIONS FOR USE

It is a violation of Federal law and may endanger the applicator or third parties to use this product without complying with all label directions and warnings. **READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH DANGER STATEMENTS AND DIRECTIONS, AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.**

**NOTE: Do Not Use Around Home Gardens, Schools, Recreational Parks or Playgrounds.**

Refer to Supplemental Pamphlet for Use Directions.

#### WORKER SAFETY RULES/REENTRY STATEMENTS

**DO NOT** get on skin, eyes or clothing.

**DO NOT** inhale spray mist.

**WASH SPLASHES** from skin and eyes immediately.

**REMOVE** and wash contaminated clothing.

**WASH** before eating, smoking and drinking.

**WEAR** full face shield, rubber gloves and apron and waterproof footwear when handling or mixing concentrate.

**WEAR** waterproof footwear and clothing when spraying or when contacting vegetation wet with spray.

**DO NOT** enter treated areas without protective clothing until sprays have dried.

**AVOID** working in spray mist. If there is risk of exposure wear goggles and approved face mask capable of filtering spray droplets.

**KEEP** all unprotected persons out of operating areas or vicinity where there may be danger of drift.

Certain states may require more restrictive reentry intervals; consult your State Department of Agriculture for further information.

Written or oral warnings regarding use of protective clothing and accidental exposure must be given to workers who are expected to be in treated areas or in areas about to be treated.

**IMPORTANT:** The effect of swallowing Paraquat is far more severe than that which usually results from skin contact or inhalation of spray mist. No opportunity for mist or product to cause serious injury or death should arise when used in strict compliance with these rules but the opportunity may arise in case of gross violations so strictly follow all these rules as if your life depends on it.



**ICI Americas Inc.**  
Agricultural Chemical Division  
Wilmington, Delaware 19897

EPA Reg. No. 10182-  
EPA Est.

#### ENVIRONMENTAL SAFETY CAUTIONS

##### WILDLIFE

This product is toxic to wildlife. Birds and other wildlife in treated areas may be killed. Do not apply directly to water.

##### DRIFT

**GRAMOXONE SUPER** is a contact herbicide that kills all green plant tissue. Do not apply under conditions involving possible drift to food, forage or other plantings that might be damaged or the crops thereof rendered unfit for sale, use or consumption. Do not apply when weather conditions favor drift from areas treated.

##### CHEMICAL HAZARD

This product reacts with aluminum to produce hydrogen gas which may form a highly combustible gas mixture. Such gas could flash or explode, causing serious personal injury, if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source. Do not mix or store in containers, spray tanks, nurse tanks or such systems made of aluminum or having aluminum fittings. After dilution with water to spray concentrations, spray systems made of, or containing aluminum parts may be used but should not be used for extended (overnight) storage.

##### EQUIPMENT/CONTAINERS

Flush all spray equipment with water after use each day. **GRAMOXONE SUPER** is corrosive to aluminum. Aluminum spray equipment and aluminum aircraft structures that are exposed to spray solution or spray drift should be flushed thoroughly with water immediately after use.

#### STORAGE AND DISPOSAL

##### PROHIBITIONS

Do not contaminate water, food or feed by storage, disposal or cleaning of equipment. Open dumping is prohibited.

##### STORAGE

Store at temperatures above 32°F. Do not contaminate feed, foodstuffs or drinking water. Do not store next to feed or food, or transport in or on vehicles containing foodstuffs or feeds. For help with any spill, leak, fire or exposure involving this material, call CHEMTAC 800/424-9300.

##### PESTICIDE DISPOSAL

This product is acutely hazardous. Improper disposal of excess pesticide, spray mixture, or residue is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

##### CONTAINER DISPOSAL

Triple rinse (or equivalent). Do not reuse container. Offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or dispose of by other procedures allowed by State and local authorities.

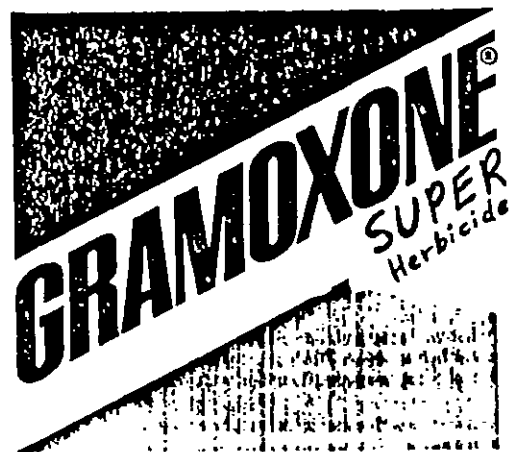
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**RESTRICTED USE PESTICIDE**

For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

**POISON**

**DO NOT POUR FROM ORIGINAL CONTAINER  
EXCEPT FOR IMMEDIATE USE.**

**SUPPLEMENTAL PAMPHLET**

**DIRECTIONS FOR USE  
READ WORKER SAFETY RULES**



**DANGER**  
ONE SWALLOW CAN KILL.

SYMPTOMS ARE PROLONGED AND PAINFUL.  
ONSET OF SYMPTOMS MAY BE DELAYED  
FOR UP TO 3 DAYS AFTER SWALLOWING.

May Be Harmful or Fatal If Absorbed Through Skin or Inhaled.  
Harmful to Skin and Eyes.

**PELIGRO—PRECAUCION AL USUARIO:** Si usted no lee  
ingles, no use este producto hasta que la etiqueta le haya  
sido explicada ampliamente.

**STATEMENT OF PRACTICAL TREATMENT**

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IMMEDIATELY induce vomiting by inserting finger in throat. Administer fluids and induce further vomiting. Get to a hospital or physician fast. **PROMPT TREATMENT IS ESSENTIAL** and must be initiated before signs and symptoms of injury appear. **Note to Physicians:** Call **IGI Americas Inc. 302/575-3000** at any hour to obtain toxicology and medical management consultation, a supply of bentonite clay, and paraquat analysis. Symptoms following ingestion may be delayed up to 3 days. To be effective, treatment for paraquat poisoning must begin IMMEDIATELY. Treatment consists of binding paraquat in the gut with suspensions of bentonite clay or charcoal and removal of paraquat from the blood by prolonged charcoal hemoperfusion or continuous hemodialysis.

**SKIN CONTACT**

IMMEDIATELY wash with soap and water. Remove and wash all contaminated clothing with soap and hot water before reuse. Prolonged contact will cause severe irritation. Contact with irritated skin, or a cut, or repeated contact with intact skin may result in poisoning.

**EYE CONTACT**

IMMEDIATELY wash eyes with water for at least 15 minutes and get medical attention. Contact may cause eye injury.

**INHALATION**

IMMEDIATELY get away from spray mist. Exposure may cause irritation, nose bleeds and may lead to poisoning. Stop and check spray procedure. Follow Worker Safety Rules on page 21.

**WASH AND DESTROY CONTAINER  
WHEN EMPTY. NEVER REUSE.**

**TO PREVENT ACCIDENTS,  
NEVER PUT INTO FOOD, DRINK OR  
OTHER CONTAINERS.**

**DO NOT USE OR STORE IN OR AROUND THE HOME  
KEEP OUT OF REACH OF CHILDREN**

**A Weed and Grass Killer • Harvest Aid Chemical.**

• Contains Stench (Odor) and Emetic

Active ingredient	By WH
Paraquat dichloride (1,1'-dimethyl-4,4'-bipyridinium dichloride) .....	20.4 %
Inert ingredients .....	79.6 %
Contains 1.5 lbs. Paraquat calcon per gallon.	
Total	100.0%

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GRAMOXONE applications are more effective when applied to weed vegetation that is not drought stressed. Reduced results may occur when weeds to be treated are heavily covered with dust.

Rates

#### DIRECTIONS FOR USE

It is a violation of Federal law and may endanger the applicator or third parties to use this product without complying with all label directions and warnings.

READ ENTIRE LABEL USE STRICTLY IN ACCORDANCE WITH DANGER STATEMENTS AND DIRECTIONS, AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.

READ DANGER AND FIRST AID TREATMENT ON INSIDE FRONT COVER AND WORKER SAFETY RULES.

NOTE: Do Not Use Around Home Gardens, Schools, Recreational Parks, or Playgrounds. Do not combine GRAMOXONE paraquat with liquid fertilizer solutions except as specified below.

DO NOT combine with suspension type liquid fertilizers as the activity of paraquat will be reduced.

Use ORTHO X-77<sup>®</sup> Spreader (non-ionic). ORTHO X-77 Spreader is recommended, but a similar and suitable non-ionic surfactant may be substituted.

Do not use dirty or muddy water for GRAMOXONE paraquat dilution as GRAMOXONE paraquat will be inactivated.

#### DIRECTIONS

### PREPLANT OR PREEMERGENCE USES

PREPLANT OR PREEMERGENCE USE—For Kill of Emerged Annual Broadleaf Weeds and Grasses and for Top Kill and Suppression of Perennials—Apply when the weeds and grasses are succulent and growth is from 1" to 6" high (larger plants are less affected by this treatment). Note: To prevent injury to germinating crop seedlings, do not apply preplant or preemergence to soils lacking clay minerals, i.e., peat, muck, pure sand, artificial planting media.

ALFALFA, CORN, LETTUCE, MELONS, PEPPERS, SORGHUM, SUGAR BEETS, TOMATOES, SAFFLOWER AND SUNFLOWER: Preplant or Preemergence Treatment—Apply 1 1/2 to 2 1/2 qts. GRAMOXONE paraquat per sprayed acre as a band treatment over the crop row, or as a broadcast treatment, prior to, during, or after planting—but before emergence of the crop. Aerial Application—5 to 10 gals. water per acre. Ground Application—Use 20 to 60 gals. diluted spray. Add ORTHO X-77 Spreader (non-ionic) at 8 to 32 fl. oz. per 100 gals. of diluted spray. Seedbeds should be formed as far ahead of planting and treatment as possible to permit maximum weed and grass emergence. Seeding should be done with a minimum amount of soil disturbance. Weeds and grasses emerging after application will not be controlled. Crop plants emerged at time of application will be killed.

Throughout this supplemental label, a number of chemicals manufactured by companies other than ICI Americas Inc. are mentioned; they are indicated by an asterisk and include:

AARKE\*—Reg. TM of CIBA GEIGY Corp.  
BANVEL\*—Reg. TM of Velsicol Chemical Corp.  
BLADEX\*—Reg. TM of Shell Chemical Company.  
DUAL\*—Reg. TM of CIBA GEIGY Corp.  
IGRAN\*—Reg. TM of CIBA GEIGY Corp.  
LASSO\*—Reg. TM of Monsanto Company.  
LEXONE\*—Reg. TM of E. I. du Pont de Nemours & Co. Inc.  
LOHUX\*—Reg. TM of E. I. du Pont de Nemours & Co. Inc.  
PRINCEP\*—Reg. TM of CIBA GEIGY Corp.  
PRONIV\*—Reg. TM of American Cyanamid Company.  
SINCOR\*—Reg. TM of the Parent Company of Farbantabren Bayer GmbH, Leverkusen.  
SUNSHAN\*—Reg. TM of E. I. du Pont de Nemours & Co. Inc.  
SUNLIAN\*—Reg. TM of Elanco Products Company.  
X-77\*—Reg. TM of Chevron Chemical Company.

Please consult each appropriate label for specific use recommendations.

For added residual control of weeds, tank mix Paraquat with BLADEX<sup>®</sup> 80 W, 90 DF or 4 L at the above rates listed on the BLADEX label. Consult the BLADEX label for weed species, timing, rates and environmental factors relative to BLADEX efficacy.

BLADEX<sup>®</sup> - Reg. TM of Shell Chemical Co.

ASPARAGUS: Preplant or Preemergence—Apply 1 1/2 to 2 1/2 qts. GRAMOXONE paraquat per sprayed acre as a band treatment over the row or as a broadcast treatment prior to, during, or after planting, but before emergence of the crop. Add ORTHO X-77 Spreader (non-ionic) at 8 to 32 fl. oz. per 100 gals. spray. Apply 50 to 100 gals. sprayer per acre. Allow maximum weeds and grass emergence prior to treatment. Seeding or transplanting should be done with a minimum of soil disturbance. Weeds and grasses emerging after treatment will not be controlled.

ASPARAGUS (Plantings Established 2 Years or More): Preemergence—Apply 1 1/2 to 2 1/2 qts. GRAMOXONE paraquat per sprayed acre in 25 to 100 gals. of spray mix. Apply as a band treatment over the row or as a broadcast application prior to emergence of the crop and/or after the last harvest. Add ORTHO X-77 Spreader (non-ionic) at 8 to 32 fl. oz. per 100 gals. of spray mix. For residual control add 2 1/2 to 5 lbs. PRINCEP<sup>®</sup> 80 W as a tank mix. Refer to PRINCEP 80 W label for specific recommendations and cautions. Crop plants emerged at time of application will be severely injured. Do not apply within 6 days of harvest.

BARLEY, WHEAT: Preplant or Preemergence Treatment—Apply 1 1/2 to 2 1/2 qts. GRAMOXONE paraquat per sprayed acre as a band treatment over the crop row, or as a broadcast treatment prior to, during, or after planting—but before emergence of the crop. Aerial Application—5 to 10 gals. water per acre. Ground Application—Use 20 to 60 gals. diluted spray. Add ORTHO X-77 Spreader (non-ionic) at 8 to 32 fl. oz. per 100 gals. of diluted spray. Seedbeds should be formed as far ahead of planting and treatment as possible to permit maximum weed and grass emergence. Seeding should be done with a minimum amount of soil disturbance. Weeds and grasses emerging after application will not be controlled. Crop plants emerged at time of application may be killed. Do not graze livestock in treated area.

BEANS (LIMA, SNAP), BROCCOLI, CABBAGE, CARROTS, CAULIFLOWER, CHINESE CABBAGE, COLLARDS, CUCURBITS (WATERMELON, CANTALOUPE/MUSKMELON, PUMPKIN, SQUASH, CUCUMBER), EGGPLANT, PEAS, TURNIP: Preplant and Preemergence Treatment—Apply 1 1/2 to 2 1/2 qts. GRAMOXONE paraquat per sprayed acre as a band treatment over the crop row, or as a broadcast treatment before, during or after planting—but before emergence of the crop. Use sufficient water to give thorough coverage. Add ORTHO X-77 Spreader (non-ionic) at 8 to 32 fl. oz. per 100 gals. diluted spray. Use the higher rate with heavier weed infestations. Seedbeds should be formed as far ahead of planting and treatment as possible to permit maximum weed and grass emergence. Seeding should be done with a minimum amount of soil disturbance. Weeds and grasses emerging after application will not be controlled. Crop plants emerged at time of application will be killed.

COTTON: Preplant Treatment—Apply 1 1/2 to 2 1/2 qts. per acre as a single broadcast application in 20 to 60 gals. water by ground application or in 5 to 10 gals. by air. Beds should be preformed to permit maximum weed and grass emergence prior to treatment. Seeding should be done with a minimum amount of soil disturbance. Weeds and grasses emerging after application will not be controlled. Add ORTHO X-77 Spreader (non-ionic) at 8 to 32 fl. oz. per 100 gals. spray.

Tank Mix with GOAL<sup>®</sup> 1.6 E (Preplant or Fallow Bed Treatment): Apply 1 1/2 to 2 1/2 qts. GRAMOXONE paraquat with 1.25 to 2.5 pts. GOAL 1.6 E for each acre treated. Apply in a minimum of 10 gals. of water per acre. Add ORTHO X-77 Spreader (non-ionic) at 8 to 32 fl. oz. per 100 gals. diluted spray. Refer to the respective labels for recommended growth stages of susceptible weeds and for specific use restrictions. GOAL<sup>®</sup>—Reg. TM of Rohm and Haas Co.

Easter Lilies (Field Grown): Preemergence—Apply 1 1/2 to 2 1/2 qts. per sprayed acre in 20 to 50 gals. of spray mix. Apply as a band treatment over the row or as a broadcast application prior to crop emergence. Do not apply more than twice per season. Lilies emerged at time of application will be severely injured. Add ORTHO X-77 Spreader (non-ionic) at 8 to 16 fl. oz./100 gals. of spray.

Rates  
1 1/3 to 2 2/3

1 1/3 to 2 2/3

1 1/3 to 5 1/3

1 1/3 to 2 2/3

1 1/3 to 2 2/3

1 1/3 to 2 2/3

1 1/3 to 5 1/3

1 1/3 to 2 2/3

## Rates

1 1/3 to 2 2/3

2 2/3

1 1/3 to 2 2/3

2/3 to 1 1/3

1 1/3

**ONIONS (Seeded) For Green or Dry Bulb Harvest: Preplant and Preemergence**—Apply 1 1/2 qts. GRAMOXONE paraquat per acre as a broadcast treatment prior to, during or after planting, but before emergence of the crop. Use the high rate for heavier weed infestations and for control of Wild Oats. Add ORTHO X-77 Spreader (non-ionic) at 8 to 32 fl. oz. per 100 gals. spray. Apply in 20 to 100 gals. water per acre. Allow maximum weed and grass emergence prior to treatment. Seeding should be done with a minimum of soil disturbance. Weeds and grasses emerging after treatment will not be controlled. Crop plants emerged at time of application will be injured. Maximum of one application at the 1 1/2 qts. per acre dosage. Do not apply within 60 days of harvest. In California—Do not apply within 200 days of harvest.

**POTATOES (Preplant or Preemergence Treatment)**—Apply 1 1/2 to 2 qts. GRAMOXONE paraquat per acre as a broadcast application in 30 to 100 gals. water by ground application, or in 5 to 10 gals. by air. Add ORTHO X-77 Spreader (non-ionic) at 8 to 32 fl. oz. per 100 gals. of diluted spray. The application should be delayed to provide maximum weed and grass emergence but should be applied not later than ground cracking, before potatoes have emerged. Application made after crop emergence has reduced yields of certain sensitive varieties. Weeds and grasses emerging after application will not be controlled. Postemergence management should be performed as required to control subsequent weed and grass emergence.

**FOR KILL OF EMERGED VOLUNTEER BARLEY (California Only)**—Preplant in Cotton, Potato, Lettuce, Melon, Safflower, Sugar Beet, and Tomato Fields—Apply 2 1/2 to 4 qts. GRAMOXONE paraquat per acre broadcast as a preplant treatment to preformed seedbeds. Aerial Application—Use 5 to 10 gals. water per acre. Add ORTHO X-77 Spreader (non-ionic) at 8 to 32 fl. oz. per 100 gals. diluted spray.

**SEEDBED PREPARATION FOR ESTABLISHING GRASSES FOR SEED PRODUCTION: To Control Grasses and Broadleaf Weeds**—Prepare the seedbed and allow weed seeds to germinate. When broadleaf weeds and annual grasses are at the 3 to 5 leaf stage apply 1 qt. GRAMOXONE paraquat in 20 to 40 gals. water per acre (larger weeds will be less affected by this treatment). Add ORTHO X-77 Spreader (non-ionic) at 8 to 32 fl. oz. per 100 gals. diluted spray. This treatment can be repeated prior to or on day of seeding. Do not allow animals to graze on treated areas. Do not use seed from treated areas for animal feed. Do not use straw from treated areas for animal bedding or feed.

## CONSERVATION TILLAGE USES

GRAMOXONE paraquat and GRAMOXONE paraquat tank mixes may be applied in liquid nitrogen and/or complete liquid fertilizer solutions (follow label recommendations for crop involved) when 20 to 60 gals. of dilute solution are applied per acre in combination with 1 to 2 qts. of ORTHO X-77 Spreader (non-ionic) per 100 gals. Equipment must be adjusted and calibrated to obtain thorough coverage of undesirable vegetation. Inadequate coverage and/or the absence of ORTHO X-77 Spreader (non-ionic) will result in a severe reduction of GRAMOXONE paraquat activity. Phosphate containing liquid fertilizer solutions will reduce the activity of GRAMOXONE paraquat. When liquid fertilizer solutions containing phosphorus are used with GRAMOXONE paraquat, and a more rapid kill is desired, use the high GRAMOXONE paraquat label rate.

**CORN ONLY: For Kill of Existing Vegetation and Residual Weed Control Where Corn Will Be Planted Directly Into a Cover Crop, Established Sod, or in Previous Crop Residues.** Tank-Mix with Atrazine:

4

## Rates

1 1/3 to 2 2/3

1 1/3 to 2 2/3

1 1/3 to 2 2/3

1 1/3 to 2 2/3

1 1/3 to 2 2/3

2 2/3

Apply 1 1/2 to 2 qts. GRAMOXONE paraquat plus 2 1/2 to 3 1/2 lbs. Atrazine 80 Wettable per acre, as a broadcast spray. Refer to Atrazine 80 Wettable label for directions, limitations and cautions. Apply 20 to 60 gals. diluted spray per acre. Add ORTHO X-77 Spreader (non-ionic) at 8 fl. oz. per 100 gals. diluted spray. Add Atrazine to spray tank first, mixing thoroughly in water. Then add GRAMOXONE paraquat and surfactant. Constant agitation recommended at all times.

**Tank Mix with AATREX<sup>®</sup> 80 W and PRINCEP 80 W:**

Apply 1 1/2 to 2 qts. GRAMOXONE paraquat plus 1 1/2 to 2 1/2 lbs. PRINCEP 80 W plus 1 1/2 to 2 1/2 lbs. AATREX 80 W per acre prior to, during, or after planting—but before crop emergence. Use the low rates of PRINCEP 80 W and AATREX 80 W on light soils, and the higher rates on heavy clay soils. Use 20 to 60 gals. of diluted spray per acre. Add ORTHO X-77 Spreader (non-ionic) at 8 fl. oz. per 100 gals. diluted spray. Add the AATREX 80 W to the spray tank while agitating, then add the PRINCEP 80 W, GRAMOXONE paraquat, and ORTHO X-77 Spreader (non-ionic). Continue agitation during application. Refer to the AATREX 80 W and PRINCEP 80 W labels for specific precautionary statements.

**Tank Mix with BLADEX<sup>®</sup> 80 W:**

Apply 1 1/2 to 2 qts. GRAMOXONE paraquat plus 1 1/2 to 5 lbs. BLADEX 80 W, depending on soil type, as a broadcast spray. Apply 20 to 60 gals. diluted spray per acre. Add ORTHO X-77 Spreader (non-ionic) at 1 qt. per 100 gals. diluted spray. Add BLADEX 80 W to spray tank first, mixing thoroughly in water. Then add GRAMOXONE paraquat and surfactant. Constant agitation recommended at all times. Do not mix with liquid fertilizer. Refer to BLADEX 80 W label for directions, limitations and cautions.

**Tank Mix with LASSO<sup>®</sup> and Atrazine:**

Apply 1 1/2 to 2 qts. GRAMOXONE paraquat (0.25 to 0.5 lb. active) plus 4 to 6 qts. LASSO (2.0 to 3.0 lbs. active), plus 1.25 to 2.5 lbs. Atrazine 80 Wettable (1.0 to 2.0 lbs. active) per acre prior to, during, or after planting, but before crop emergence. Use 20 to 60 gals. of diluted spray per acre. Add ORTHO X-77 Spreader (non-ionic) at 8 fl. oz. per 100 gals. of diluted spray. Add the Atrazine to the spray tank while agitating, then add the LASSO, GRAMOXONE paraquat and ORTHO X-77 Spreader (non-ionic). Continue agitation during application. Refer to Atrazine and LASSO labels for cautions and for specific rates for a given soil type.

**Tank Mix with DUAL<sup>®</sup> and AATREX:** Apply 1 1/2 to 2 qts. GRAMOXONE paraquat per acre plus DUAL plus AATREX as a broadcast ground spray before, during, or after planting but before crop emergence. Apply in 20 to 60 gals. of diluted spray per acre. Add ORTHO X-77 Spreader (non-ionic) at 8 fl. oz. per 100 gals. of diluted spray. Refer to DUAL and AATREX labels for rates of application, directions, limitations, cautions and for a list of weeds controlled by preemergence activity of DUAL and AATREX. Add AATREX to spray tank first, mixing thoroughly in carrier. Then add DUAL, GRAMOXONE paraquat and ORTHO X-77 Spreader (non-ionic). Constant agitation recommended at all times.

**Tank Mix with DUAL and BLADEX:** Apply 1 1/2 to 2 qts. GRAMOXONE paraquat per acre plus DUAL plus BLADEX as a broadcast ground spray before, during or after planting but before crop emergence. Apply in 20 to 60 gals. of diluted spray per acre. Add ORTHO X-77 Spreader (non-ionic) at 1 to 2 qts. per 100 gals. of diluted spray. Refer to DUAL and BLADEX labels for rates of application, directions, limitations, cautions and for a list of weeds controlled by preemergence activity of DUAL and BLADEX. Add BLADEX to spray tank first, mixing thoroughly in carrier. Then add DUAL, GRAMOXONE paraquat and ORTHO X-77 Spreader (non-ionic). Constant agitation recommended at all times.

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## Rates

1 1/3 to 2 2/3

1 1/3 to 2 2/3

1 1/3 to 5 1/3

1 1/3

**GRAIN SORGHUM:** For Desiccation and Residual Control of Annual Broadleaf Weeds and Grasses Where Sorghum Will Be Planted Directly Into Previous Crop Residues — Apply 1 1/2 to 2 1/2 lbs. GRAMOXONE paraquat plus 2 to 3 lbs. of Atrazine 80 Wettable per acre as a broadcast ground spray before, during, or after planting but before crop emergence. Refer to Atrazine 80 Wettable label for directions, limitations, cautions and for a list of weeds controlled by preemergence activity of Atrazine. Apply 20 to 60 gals. diluted spray per acre. Add ORTHO X-77 Spreader (non-ionic) at 16 to 32 fl. oz. per 100 gals. diluted spray. Water or nitrogen solutions may be used as a carrier. Add Atrazine to spray tank first, mixing thoroughly in carrier. Then add GRAMOXONE paraquat and ORTHO X-77 Spreader (non-ionic). Constant agitation recommended at all times. This herbicide tank mixture will not control volunteer sorghum or shattercane which emerges after application.

**Tank Mix with Atrazine and IGRAN® 80 W:** (This tank mix should be used instead of GRAMOXONE paraquat + Atrazine when better preemergence control of barnyardgrass, crabgrass, and tall panicum is desired). Apply 1 1/2 to 2 1/2 lbs. GRAMOXONE paraquat plus 1 to 2 lbs. Atrazine 80 W or 1.6 to 3.2 pts. of Atrazine 4L plus 2 to 2 1/2 lbs. IGRAN 80 W per acre as a broadcast ground spray before, during, or after planting but before crop emergence. Weed control is often superior from application made approximately one week prior to planting. Use low rates of Atrazine and IGRAN 80 W on medium soils, and the higher rates on heavy soils. Refer to Atrazine and IGRAN 80 W labels for directions, limitations, cautions and for a list of weeds controlled by preemergence activity of Atrazine and IGRAN 80 W. The addition of 2,4-D (ester) at 0.5 lb. active per sprayed acre may aid in the suppression of perennial broadleaf weeds and annual broadleaf weeds that have made excessive growth before application. Refer to the 2,4-D label for directions, limitations, and cautions. Apply 20 to 40 gals. diluted spray per acre. Add ORTHO X-77 Spreader (non-ionic) at 16 to 32 fl. oz. per 100 gals. diluted spray. Use only water or nitrogen solutions as a carrier. Add IGRAN 80 W to spray tank first, mixing thoroughly in carrier. Then add Atrazine, 2,4-D (if used), GRAMOXONE paraquat, and ORTHO X-77 Spreader (non-ionic). Constant agitation recommended at all times.

**SOYBEANS: Preplant or Preemergence Treatment** — Apply 1 1/2 to 2 1/2 lbs. GRAMOXONE paraquat per sprayed acre as a band treatment over the crop row, or as a broadcast treatment, prior to, during, or after planting — but before emergence of the crop. Use the 1 1/2 pt. rate when spring annual broadleaf weeds and grasses are less than 4 inches high or when a directed spray or cultivation will be used within 3 weeks after planting. **Aerial Application** — 5 to 10 gals. spray mix per acre. **Ground Application** — 20 to 60 gals. spray mix per acre. Add ORTHO X-77 Spreader (non-ionic) at 8 fl. oz. per 100 gals. of diluted spray. Seeding should be done with a minimum amount of soil disturbance. Weeds and grasses emerging after application will not be controlled. Crop plants emerged at time of application may be killed and yields reduced.

**SOYBEANS: Minimum Tillage Systems. Tank Mix with LASSO and LOROX®:** Use this tank mixture for control of most emerged annual weeds, suppression of many emerged perennial weeds and preemergence control of many annual weeds when soybeans will be planted directly into a cover crop, stale seed bed, or in previous crop residues such as wheat stubble. This tank mixture will not control regrowth from perennial weeds. Do not apply by air. For weeds controlled preemergence, see the LASSO and LOROX labels. Refer to the LASSO and LOROX labels for precautionary statements, crop rotation restrictions, rates which are

dependent upon soil textures, directions, limitations, and cautions.

**Broadcast Treatment** — Apply 1 1/2 to 2 1/2 lbs. GRAMOXONE paraquat in this tank mixture in 20 to 60 gals. water per acre immediately before, during or after planting but before crop emergence. Use the 2 1/2 pt. rate if any weeds are 4 to 6 inches tall. This mixture may not control weeds taller than 6 inches. As density of stubble, crop residue or weeds increases, spray gallonage should be increased within the recommended range for complete coverage. Add ORTHO X-77 Spreader (non-ionic) at 8 fl. oz. per 100 gals. of diluted spray. First, add the LOROX to the spray tank while agitating, then add the LASSO, GRAMOXONE paraquat and ORTHO X-77 Spreader (non-ionic). Continue agitation during application.

**SOYBEANS (Preemergence Treatment) — For Kill of Emerged Annual Broadleaf Weeds and Grasses and for Top Kill and Suppression of Emerged Perennials Where Soybeans Will Be Planted Directly into a Preformed Bed, Cover Crop, or in Previous Crop Residues. Tank Mix with LOROX:** Apply 1 1/2 to 2 1/2 lbs. GRAMOXONE paraquat in this tank mixture as a band treatment over the crop row or as a broadcast treatment after planting — but before emergence of the crop. Refer to the LOROX labels for precautionary statements, rates which are dependent upon soil textures, directions, limitations and cautions. **Aerial Application** — Apply 5 to 10 gals. spray mix per acre. **Ground Application** — Use 20 to 60 gals. diluted spray. Add ORTHO X-77 Spreader (non-ionic) at 8 fl. oz. per 100 gals. of diluted spray. Seeding should be done with a minimum amount of soil disturbance. Crop plants emerged at time of application will be killed. For band applications, compute amount of Paraquat and LOROX needed per acre by dividing the band width by the inches between crop rows and then multiplying the answer by the recommended broadcast rates. Continue agitation during application. This herbicide tank mixture WILL NOT CONTROL Rhizome Johnsongrass.

**Tank Mix with LASSO and SENCOR®:** For Contact Action on Emerged Weeds and Preemergence Control of Smartweed, Pigweed and Cocklebur, Foxtail and Crabgrass. (This tank mix should be used instead of Paraquat + LOROX or Paraquat + SENCOR when better preemergence control of crabgrass and foxtail is desired). Apply 1 1/2 to 2 1/2 lbs. GRAMOXONE paraquat in this tank mixture per acre as a preemergence broadcast ground spray. Refer to LASSO and SENCOR labels for rates which are dependent upon soil textures, directions, limitations and cautions. Apply in 20 to 60 gals. spray mix per acre. Use the 2 1/2 pt. rate of Paraquat if weeds are 4 to 6 inches tall. This mixture will not control weeds taller than six inches. Add ORTHO X-77 Spreader (non-ionic) at 8 fl. oz. per 100 gals. of diluted spray. Add SENCOR to the spray tank first and mix thoroughly. Then add LASSO followed by GRAMOXONE paraquat and ORTHO X-77 Spreader (non-ionic). Constant agitation is recommended at all times. Do not use treated vines for feed or forage.

**Tank Mix with Prowl® and SENCOR or LEXONE® and/or LOROX (Except CA):** Use this tank mixture for control of most emerged annual weeds, suppression of many emerged perennial weeds and preemergence control of many annual weeds when soybeans will be planted directly into a cover crop, stale seed bed, or in previous crop residues such as wheat stubble. This tank mixture will not control regrowth from perennial weeds. Apply 1 1/2 to 2 1/2 lbs. GRAMOXONE paraquat per acre plus PROWL plus SENCOR or LEXONE and/or LOROX as a broadcast ground spray before, during, or no more than 2 days after planting (before crop emergence). The higher Paraquat rates will be required under dry conditions or when weeds are 3-6 inches tall. Apply in 20 to 60 gals. of diluted spray per acre. Add ORTHO X-77 Spreader (non-ionic) at 2 to 4 pts. per 100 gals. of diluted spray. Refer to PROWL,

## Rates

1 1/3 to 2 2/3  
2 2/3

1 1/3

1 1/3 to 2 2/3

2 2/3

1 1/3 to 5 1/3

## Rates

SENCOR, LEXONE and LOROX labels for rates of application, directions, limitations, cautions and for a list of weeds controlled preemergence by each herbicide. Fill spray tank one-half to three-quarters full with water. Add SENCOR or LEXONE or LOROX to spray tank first, mixing thoroughly in water. Refer to respective labels for mixing directions. Then add PROWL, GRAMOXONE paraquat and ORTHO X-77 Spreader (non-ionic). Constant agitation recommended at all times.

**Tank Mix with SENCOR: For Contact Action on Emerged Weeds and Preemergence Control of Smartweed, Pigweed, and Cocklebur.** (This tank mix should be used instead of Paraquat + LOROX when infestations of emerged smartweed, pigweed and cocklebur are present at application and when better preemergence control of these species is desired).

Apply 1/2 pt. GRAMOXONE paraquat in this tank mixture per acre as a broadcast ground spray before, during or after planting but before emergence of the crop. Use the 2 2/3 pt. rate of GRAMOXONE paraquat if weeds are 4 to 6 inches tall. This mixture will not control weeds taller than six inches. Apply in 20 to 60 gals. spray mix per acre. Add ORTHO X-77 Spreader (non-ionic) at 1 qt. per 100 gals. of diluted spray. Do not use treated vines for feed or forage. Refer to the SENCOR label(s) for cautions, limitations and recommended rates for specific soil textures. In using minimum tillage equipment, it is important to observe the proper planting depth caution stated on the SENCOR labels so application is not made directly onto the soybean seed.

**Tank Mix with SURFLAN\*\* and SENCOR or with SURFLAN and LEXONE: For Contact Action on Emerged Weeds and Preemergence Control of Smartweed, Pigweed, Lambsquarters, Velvetleaf, Common Ragweed, Foxtail and Fall Panicum.** (This tank mix should be used instead of Paraquat + LASSO + SENCOR, Paraquat + SENCOR or Paraquat + LOROX when longer residual control of foxtail and fall panicum is desired).

Apply 1/2 pt. GRAMOXONE paraquat in this tank mixture per acre at planting or within 2 days after planting. Refer to SURFLAN and SENCOR or LEXONE labels for rates which are dependent upon soil textures, directions, limitations and cautions. Apply in 20 to 40 gals. spray mix per acre. Add ORTHO X-77 Spreader (non-ionic) at 8 fl. oz. per 100 gals. of diluted spray. Add SENCOR or LEXONE to the spray tank first and mix thoroughly. Then add SURFLAN followed by GRAMOXONE paraquat and ORTHO X-77 Spreader (non-ionic). Constant agitation is recommended at all times. Do not use treated vines for feed or forage.

**Tank Mix with DUAL and SENCOR or LEXONE or LOROX:** Apply 1/2 to 2 pts. GRAMOXONE paraquat per acre plus DUAL plus SENCOR or LEXONE or LOROX as a broadcast ground spray before, during, or after planting but before crop emergence. Apply in 20 to 60 gals. of diluted spray per acre. Add ORTHO X-77 Spreader (non-ionic) at 8 fl. oz. per 100 gals. of diluted spray. Refer to DUAL, SENCOR, LEXONE and LOROX labels for rates of application, directions, limitations, cautions, and for a list of weeds controlled by preemergence activity of DUAL, SENCOR, LEXONE and LOROX. Add SENCOR or LEXONE or LOROX to spray tank first, mixing thoroughly in carrier. Then add DUAL, GRAMOXONE paraquat and ORTHO X-77 Spreader (non-ionic). Constant agitation recommended at all times.

### **WHEAT: Chemical Fallow**

For Desiccation of Most Emerged Annual Broadleaf Weeds and Grasses and Suppression of Many Emerged Perennial Weeds During the Fallow Period(s) of the Wheat-Fallow, Wheat-Annual Crop-Fallow, Wheat-Annual Crop and Continuous Wheat Cropping Systems—Apply 1/2 to 2 pts. GRAMOXONE paraquat per acre as a broadcast spray. Aerial Appli-

1 1/3 to 2 2/3  
2 2/3

1 1/3

1 1/3 to 2 2/3

1 1/3 to 2 2/3

## Rates

cation—Apply 5 to 10 gals. spray mix per acre. **Ground Application**—Use 20 to 60 gals. spray mix per acre. As density of stubble, crop residue or weeds increases, spray gallonage should be increased within the recommended range for complete coverage. Add ORTHO X-77 Spreader (non-ionic) at 1 to 4 pts. per 100 gals. of diluted spray. Use only clean water or nitrogen solutions as a carrier. Weeds and grasses emerging after application and regrowth from perennial weeds will not be controlled. Weeds taller than 6 inches at application may not be controlled. The addition of 2,4-D or BANVEL\*\* may aid in the suppression of perennial broadleaf weeds and annual broadleaf weeds that have made excessive growth before application. Refer to 2,4-D and BANVEL labels for directions, limitations and cautions. For extended weed control during the fallow period, tank mix with a registered residual herbicide or herbicide combination. Refer to residual herbicide label(s) for directions, limitations, cautions and for a list of weeds controlled by preemergence activity of the residual herbicide(s). Add wettable powder herbicide(s) to spray tank first, mixing thoroughly in carrier. Then add liquid herbicide(s), GRAMOXONE paraquat and ORTHO X-77 Spreader (non-ionic). Constant agitation recommended at all times.

## **PASTURE AND RANGE RESEEDING**

**PASTURE AND RANGE RESEEDING: Suppression of Existing Sod and Undesirable Emerged Broadleaf Weeds and Grasses to Permit Pasture and Range Reseeding**—Apply recommended rates in water to make 18 to 75 gals. diluted mix per sprayed acre. Add 8 to 32 fl. oz. ORTHO X-77 Spreader (non-ionic) per 100 gals. spray. Apply broadcast or in bands over the drill row prior to, or at time of seeding desired grasses and/or forage legumes. Apply as a band treatment when recovery of the sprayed sod is desired, such as in the case with desirable fescue grass. Apply as a broadcast treatment when existing grass species is undesirable and should be totally suppressed, such as in the case with run-down bluegrass sod. **West of Cascade and Sierra Nevada Mountains**—1/2 to 2 pts. GRAMOXONE paraquat per sprayed acre prior to, or at time of seeding grasses such as Hardinggrass and Palesue Orchardgrass. Apply in October through December after first fall rains and after weeds have emerged and sod has started new growth. For best seeding results, apply on moderate to heavily grazed areas. Do not use in areas with heavy sod and weed growth. Do not pasture treated areas until growth of newly planted seedlings is 3 to 6 inches high.

**East of Rocky Mountains**—1/2 to 2 pts. GRAMOXONE paraquat per sprayed acre during the growing season. Use the 2 pts. rate to suppress vigorous and coarse sod species such as Bromegrass. See specific directions for use in the South and Southeast for suppression of Bermudagrass or Bahiagrass sods. Apply prior to, or at time of seeding grasses or forage legumes such as alfalfa, clover and birdsfoot trefoil. Apply only to grazed or mowed pastures which are not more than 2 to 3 inches in height at time of treatment. Do not graze treated areas until the newly planted seedlings have reached their recommended grazing height. Under good seedling emergence and growing conditions, allow a minimum of one month between treatment and first grazing. Seedling grasses, and forage legumes should be at least 6" tall; Sudangrass must be 18" tall and Sorghum-sudan 24" tall at first grazing. Under late fall or winter conditions, it may take 3 to 5 months for seeded grasses and/or legumes to reach recommended grazing height.

**South and Southeast—Bermudagrass or Bahiagrass Sods—Late Summer or Early Fall**

1 1/3 to 2 2/3

1 1/3 to 2 2/3  
2 2/3

5-5-16



## Rates

1 1/3

1 1/3

**Application for Sod Suppression when Seeding Winter Annuals:** Apply 1/2 pt. GRAMOXONE paraquat per acre in 20 to 30 gals. water in late summer or early fall to sod that does not exceed 3 inches in height. Apply prior to, or at time of seeding winter annuals. Add 1 qt. ORTHO X-77 Spreader (non-ionic) per 100 gals. spray. Do not pasture in treated areas until 60 days after treatment or until winter annual seedlings are 9 inches tall.

**BERMUDAGRASS PASTURES:** For the Suppression of Emerged Annual Broadleaf and Grassy Weeds Including Little Barley, Broomrape, Buttercup, and Carolina Geranium in Dormant Bermudagrass Pastures — Apply 1/2 pt. per acre GRAMOXONE paraquat in 20 to 30 gals. water with ground equipment or 3 to 5 gals. water per acre with fixed wing aircraft during March. For control of little barley, apply before the mid boot stage. Add 1 qt. of ORTHO X-77 Spreader (non-ionic) per 100 gals. spray mix. Do not pasture or mow for hay until 40 days after treatment.

## ALFALFA, CLOVER

**ALFALFA, CLOVER**—Washington, Oregon, Colorado, Idaho, Montana, Utah, Nevada, Wyoming, and California (counties of Del Norte, Siskiyou, Modoc, Shasta, Lassen, Plumas, Sierra and Nevada): Apply for Desiccation of Ryegrass, Bluegrass, Cheatgrass, Dogfennel, Chickweed, and Tansymustard in Dormant Alfalfa and Clover, Except Annual Clover — Apply 2 to 4 pts. GRAMOXONE paraquat per acre (use high rate for cheatgrass) in 20 to 100 gals. spray mix by ground as a broadcast application. Apply by air in 5 to 10 gals. spray mix per acre. Apply to established stands after the last fall cutting when the crop is dormant but before spring growth starts. Do not apply if regrowth following the last fall cutting is more than 2" tall. Alfalfa and clover foliage present at the time of application will be burned. Apply when the broadleaf weeds and grasses are succulent and growth is from 1" to 6" tall. Add ORTHO X-77 Spreader (non-ionic) at 8 to 32 fl. oz. per 100 gals. spray mix. Do not pasture animals in treated fields before first cutting. Do not graze, cut or harvest within 60 days of application for clover or 42 days of application for alfalfa. Do not apply more than once per season.

**ALFALFA:** For Use in States East of the Rockies and North of the Southern Borders of Colorado, Kansas, Missouri, Kentucky, and Virginia — For control of Bluegrass, Chickweed, Henbit, and Downy Brome and suppression of perennial grasses including Orchard Grass, Timothy and Smooth Brome. Apply 2 to 4 pts. GRAMOXONE paraquat per acre in 20 to 50 gals. water by ground equipment as a broadcast application. Apply by air in 5 to 10 gals. spray mix per acre. Use 1/2 pt. rate for kill or suppression of harder to control weeds and grasses, such as the perennial species. Do not apply if fall regrowth following the last fall cutting is more than 6" tall. Apply to well-established stands (at least one year old) after the last fall cutting when the crop is dormant or before spring growth reaches one inch. Alfalfa foliage present at the time of application will be burned which may reduce the yield of the first cutting. Weeds and grasses should be succulent and growing at the time of application. Weeds that germinate after application will not be controlled. Add ORTHO X-77 Spreader (non-ionic) at 8 to 32 fl. oz. per 100 gals. spray mix. Do not graze, cut or harvest within 60 days of application. Do not apply more than once per season.

**Tank Mix with PRINCEP 80 W Simazine Weed Killer:**

**ALFALFA only**—For Control of Filaree, Jim Hill Mustard, and Shepherdspurse, and for improved Control of Bluegrass, Cheatgrass, Chickweed, and Tansymustard. Apply 1/2 to 4

10

**Tank Mix with VELPAR L<sup>®</sup>:** — — — — —  
**Alfalfa only**—For control of Chickweed, Downy Brome and Tansymustard (Idaho, Oregon, Utah and Washington only). Apply 1 1/2 to 2 1/2 pts. GRAMOXONE Paraquat plus 1 to 2 qts. of VELPAR L per acre in 10 gals. spray mix by air or 20 gals. spray mix by ground equipment. Add ORTHO X-77 Spreader (non-ionic) at 16 to 32 fl. oz. per 100 gals. spray mix. Use the lower rate of VELPAR L on loamy sand or sandy loam soils. Use the 1/2 pt. rate of paraquat when weeds and grasses are less than 4 inches tall. Refer to the VELPAR L label for cautions, limitations and recommended rates for specific soil types. Apply once to established stands of alfalfa during the dormant season for alfalfa. Do not apply to regrowth that is more than 2 inches tall. Do not apply following cuttings during the growing season. Do not apply to alfalfa during the first season after seeding. Stress which may be caused in part by winter disease, insects, winter kill, over cutting, drought or frost may as a chance of crop injury. Temporary chlorosis may occur on alfalfa regrowth. Do not graze, cut or harvest within 42 days of application.

## Rates

1 1/3

pts. GRAMOXONE paraquat plus 1 to 2 lbs. of PRINCEP 80 W in 20 to 100 gals. spray mix per acre with ground equipment or 5 to 10 gals. spray mix per acre by air. Add ORTHO X-77 Spreader (non-ionic) at 8 to 32 fl. oz. per 100 gals. spray mix. Use the 1/2 pt. rate of GRAMOXONE paraquat when weeds and grasses are less than 4" tall. Refer to PRINCEP 80 W label for cautions, limitations, and recommended rates for specific soil types. Do not pasture animals in treated fields before first cutting. Do not graze, cut or harvest within 90 days of application. Do not apply more than once per season.

**ALFALFA only**—Suppression and Control of Broadleaf Weeds and Grasses in New Alfalfa Seedlings Grown for Hay (California Only).

For Control of:	Use Rate Directions—Pint/Acre		Suppression	Control
	For Suppression	For Control		
Spikeweed (4 in. tall or less)	3/4 pt.	1 1/2 to 2 pts.	2/3	1 1/2 - 2 1/3
Volunteer Small Grain (8 in. tall or less)	2 1/2 to 1 pt.	2 1/2 pts.	2 1/3 - 1 1/3	2 2/3
Fiddleneck (6 in. tall or less)	2 1/2 to 1 1/2 pts.	2 1/2 pts.	2 1/3 - 1 1/3	2 2/3
Shepherdspurse	1 1/2 to 2 1/2 pts.	— 1/3	1 1/2 - 2 1/3	—
Annual Bluegrass	—	1 1/2 to 2 pts.	—	1 1/2 - 2 1/3
Chickweed	—	1 1/2 to 2 pts.	—	1 1/2 - 2 1/3
Red Maids (6 in. tall or less)	—	1 1/2 to 2 pts.	—	1 1/2 - 2 1/3

Apply in 25 to 50 gals. water per acre by ground or in 5 to 10 gals. by air as a broadcast application during late winter or early spring. Add ORTHO X-77 Spreader (non-ionic) at 8 to 32 fl. oz. per 100 gals. spray mix. Do not use the 1/2 pt. rate unless the alfalfa has at least 3 trifoliate leaves; the 1/2 pt. rate unless the alfalfa has 6 trifoliate leaves; or rates over 1 1/2 pt. unless there are 9 trifoliate leaves. Alfalfa foliage present at time of application will be burned. Do not pasture animals in treated fields before first cutting. Do not graze, cut or harvest within 70 days of application. Do not apply more than once during the first growing season.

**CAUTION: SEEDLING ALFALFA STANDS WILL BE REDUCED AND REPLANTING MAY BE NECESSARY NOT RECOMMENDED IN SEEDLING ALFALFA GROWN FOR SEED.**

**Insert Copy B (Pg. 10 A)**

## HARVEST-AID USES

**COTTON HARVEST AID**  
**TO AID IN OPENING OF MATURE BOLLS AND TO DESICCATE GREEN LEAVES:** 3/4 pt. of GRAMOXONE paraquat in combination with 1 pt. of phosphate or 1 gal. of chlorate defoliant per acre. Apply when 80% or more of the bolls are open and the remaining bolls to be harvested are mature. Development of immature bolls will be inhibited.

**TO AID IN DEFOLIATION AND OPENING OF MATURE BOLLS OF WESTERN COTTON (ARIZONA, CALIFORNIA):** First Application — 4 to 7 1/2 pts. GRAMOXONE paraquat plus 1 to 2 pts. phosphate defoliant or 1 to 2 gals. chlorate defoliant per acre. Use higher dosages on rank

**NOTE:** Do not use on gravelly or rocky soils, exposed sub soils, hardpan, sand, poorly drained or alkali soils. Crop injury, including mortality, may result in fields having restricted root growth due to non-uniform soil profiles, soil is at bases, hardpans and clay lenses.

VELPAR L—Reg. TM of E. I. duPont de Nemours & Co., Inc.

2 2/3 to 4

2 2/3 to 4

4

1 1/3 to 4

Insert Copy A  
(Pg. 10 A)

2/3

4/9 to 2/3

1 1/3 to 2 2/3

1 1/3

90610

the first spring cutting. Do not apply if regrowth after grazing or cutting is more than 2 inches tall and do not graze or harvest within 60 days of application or excessive residues may result. Alfalfa foliage present at the time of applications will be discolored and temporarily stunted. Total hay yield of the first cutting may be reduced in alfalfa fields with severe weed infestation. This reduction will usually be directly proportionate to the loss of weed weight. Apply when weeds are succulent and growth is less than 6 inches tall. Add ORTHO X-77 Spreader (non-ionic) at 16 oz./100 gals. spray mix. Do not apply more than once per season. Do not apply following cuttings during the growing season.

**ALFALFA: Established Plantings (California only):** For Desiccation of Bluegrass, Ryegrass, Shepherdspurse, Chickweed, Tansymustard, Foxtail, Sowthistle and Groundsel - Apply  $1\frac{1}{2}$  to  $2\frac{1}{2}$  pts. in 20 to 100 gals. spray mix by ground as a broadcast application. Apply by air in 5 or more gals. spray mix per acre. Use high rate for Ryegrass, Shepherdspurse, Sowthistle and Groundsel. Do not apply if regrowth after grazing or cutting is more than 2 inches tall and do not graze, cut or harvest within 60 days of application or excessive residues may result. Alfalfa foliage present at the time of application will be burned and temporarily stunted. Apply when broadleaf weeds and grasses are succulent and growth is from 1 to 6 inches tall (treat before grasses tiller). Add ORTHO X-77 Spreader (non-ionic) at 8 to 16 oz./100 gals. spray mix. Do not apply more than once per season. Do not apply following cuttings during growing season.

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COPY B

**ALFALFA: For Weed Control Between Cuttings in States East of the Rockies** - Apply  $1\frac{1}{2}$  pt. per acre in 20 to 60 gals. of water by ground equipment as a broadcast application for control of annual grasses and broadleaves and the suppression of perennial weeds. Weeds much beyond the seedling stage and the stubble of those cut off during harvest will be less affected by the treatment. Apply to established stands (at least one year old). Apply immediately after alfalfa has been removed for silage or hay. Do not treat more than 5 days after cutting. Alfalfa foliage present at the time of application will be burned. Weeds that germinate after application will not be controlled. In arid areas or when soil moisture is limited, effectiveness may be reduced. Add ORTHO X-77 Spreader (non-ionic) at 16 to 32 fl. oz./100 gals. of spray mix. Do not graze, cut or harvest within 30 days of application. Make 1 to 3 applications as needed, during the cutting season. These sprays can be applied in addition to a dormant application.

Copy

## Rates

2/3

2/3 - 1/3

3 2/3 - 1/3

1/3 - 2 2/3  
1/3

2 2/3

1 1/3

1/3 - 2 2/3  
2/3 1/3

cotton (Caution — Do not use more than 2 1/2 pt. GRAMOXONE in initial application, as excessive desiccation may occur.) Apply when 60% or more of the bolls are open and remaining bolls to be harvested are mature. Development of immature bolls will be inhibited. Do not use more than 4.0 lbs. actual sodium chlorate per acre or more than 1.5 lbs. actual phosphate type defoliant per acre.

**Second Application — To Aid in Opening of Mature Bolls at Second or Later Harvest Aid Treatment and to Desiccate Green Leaves —** 1/2 to 1 1/2 pt. GRAMOXONE paraquat per acre (in desert cotton areas or on rank vigorous cotton, use the 1 1/2 pt. rate only) or 2/3 to 1 1/2 pt. GRAMOXONE paraquat plus 1 1/2 to 2 pts. phosphate defoliant or 1 1/2 to 2 gals. chlorate defoliant. Apply when 75% or more of the bolls are open and the remaining bolls to be harvested are mature. Development of immature bolls will be inhibited.

**TO DESICCATE STRIPPER COTTON:** 1 1/2 to 2 1/2 pts. GRAMOXONE paraquat per acre. When foliage is dense, use 2 applications of 1 1/2 pt. if necessary. Apply when 85% or more of the bolls are open and the remaining bolls to be harvested are mature. Development of immature bolls will be inhibited.

**AERIAL APPLICATION —** Apply 3 to 10 gals. spray mix per acre. Use ORTHO X-77 Spreader (non-ionic) at 8 to 32 fl. oz. per 100 gals. spray mix. Do not apply during periods of thermal inversion to avoid drift.

**GROUND APPLICATION —** Apply 10 to 30 gals. spray mix per acre. Arrange nozzles to provide thorough coverage of the foliage. Use ORTHO X-77 Spreader (non-ionic) at 8 to 32 fl. oz. per 100 gals. spray mix.

May apply as split application. Do not pasture lactating dairy animals. Do not pasture livestock in treated fields within 15 days after treatment. Remove livestock from treated area 30 days before slaughter. Do not feed gin trash to livestock. Do not apply to cotton within 3 days before harvest. Repeat application if necessary. Do not make more than 2 applications or exceed a total of 2 1/2 lbs. per acre. When combined with phosphate defoliants, observe livestock cautions listed on the phosphate label. When combined with chlorate defoliants, do not pasture livestock on treated areas or feed treated foliage or gin trash. Do not apply within 7 days when used with phosphate or chlorate defoliant.

**GUAR — For Use as a Preharvest Crop Desiccant —** Apply 1 1/2 qt. GRAMOXONE paraquat in 20 to 30 gals. of water per acre. Add ORTHO X-77 Spreader (non-ionic) at 1 to 2 qts. per 100 gals. water. Apply after pods are fully matured. Do not harvest until at least 4 days after application. Do not graze treated areas or feed treated forage to livestock.

**POTATO VINES: PREHARVEST VINE KILLING —** 1 1/2 to 2 1/2 pts. GRAMOXONE paraquat per acre. Use the 2 1/2 pt. rate where quick vine kill is desired or 2 applications of 1 1/2 pt. when vine growth is dense. Apply in 50 to 100 gals. water per acre with thorough coverage. Add 8 to 32 fl. oz. of ORTHO X-77 Spreader (non-ionic) per 100 gals. water. Begin application when leaves are beginning to turn yellow. Immature potato foliage and drought stressed potato foliage are tolerant to GRAMOXONE paraquat and desiccation will not be complete. Do not make more than 2 applications with a minimum of 5 days between applications. Do not apply GRAMOXONE paraquat to potatoes within 3 days before harvest. Do not pasture livestock in treated potato fields. To avoid injury to subsequent crops, do not use on muck or peat soils. Do not use GRAMOXONE paraquat for desiccating potato vines when the potatoes are to be stored or used for seed as this use may result in the tuber decomposition and failure of

seed pieces to germinate and grow normally.

**SOYBEAN HARVEST AID —** Apply 2/3 to 1 1/2 pt. GRAMOXONE paraquat per acre to weeds and grasses. Use high rate on cocklebur. Add 1 qt. of ORTHO X-77 (non-ionic) per 100 gals. spray. **Aerial Application —** 2 to 5 gals. spray per acre. **Indeterminate Varieties:** Apply when the seed pods have reached a mature brown color or when seed moisture is 35% or less. **Determinate Varieties:** Apply when soybean plants are mature, i.e., beans are open, at least 1/2 of leaves have dropped, and leaves left on plants are turning brown. Mature soybeans will be injured. Mature cockleburs, especially drought-tolerant to GRAMOXONE paraquat and desiccation will not be complete. Do not stock within 15 days of treatment. Remove livestock from treated fields at least 30 days before slaughter.

**SUNFLOWER (ONSEED VARIETIES ONLY) — For Desiccation of Sunflower Broadleaf Weeds and Grasses to Facilitate Harvesting:** Apply 2 to 3 pts. GRAMOXONE paraquat per acre in 5 gals. spray mix by air or in 20 to 40 gals. by ground application. Use the higher rate when crop stands or weed infestations are heavy. Apply when flower seeds reach physiological maturity (when seed moisture is 35% or less). In many varieties, this corresponds to the time when the back of the heads or bracts are turning brown. Harvest 7 to 21 days after application. Add ORTHO X-77 (non-ionic) at 1 qt. per 100 gals. water. Do not graze treated areas or feed to livestock.

**SUGARCANE — Preharvest Crop Desiccation (Florida and Texas Only) —** GRAMOXONE paraquat per acre. Apply to mature plant or stubble cane in 20 to 40 gals. water per acre. Use higher rate under cool, cloudy weather conditions. ORTHO X-77 Spreader (non-ionic) should be added to all sprays at the rate of 1 pt. per 100 gals. water. Apply with aircraft sprayer 3 to 14 days before burning and harvest. For use on sugarcane when weather is clear and warm. Apply as a coarse spray at low pressure to prevent spray drift.

## DIRECTED SPRAYS

**ORCHARDS, VINEYARDS, WINDBREAK, SHADE AND ORNAMENTAL TREES: Annual Broadleaf Weeds and Grasses and For Top Kill and Suppression of Green Suckers under Filbert Trees, in the Interspaces and Around the Bases of Trees —** Acerola, Almonds, Apples, Apricots, Avocados, Bananas, Cherries, Figs, Filberts, Grapes, Kiwifruit, Macadamia Nuts, Nectarines, Olives, Pears, Pecans, Pistachios, Plums, Prunes, Walnuts and other trees such as Ash, Elm, Fir, Oak and Pine — Apply as a directed spray at 1 1/2 to 2 pts. GRAMOXONE paraquat per acre in 30 to 150 gals. water (use 30 to 50 gals. water for perennials to cover the weeds and grasses. Add ORTHO X-77 Spreader (non-ionic) at 8 fl. oz. per 100 gals. water. Apply when the weeds and grasses are succulent and the new growth is 6 to 12 inches high. For mature woody weeds, green suckers, late germinating weeds and for perennials — retreatment or spot treatment may be necessary.

# Rates

For grapes, treat when sucker growth is no more than 12" long.

allow spray to contact green stems, fruit or foliage as injury may result. Do not spray under windy conditions and use a shield for young trees or vines. Do not allow animals to graze on treated areas. Do not apply when nuts to be harvested are on the ground. For Kewfruit, do not treat more than 3 times per year and do not apply within 14 days of harvest. For Pistachios, do not harvest within 7 days of treatment and do not exceed two applications after shells split.

**ALMONDS, GRAPES, AND WALNUTS (California Only); ORANGES (California and Florida Only); SOUR CHERRIES (Michigan Only); APPLES, PEACHES, PEARS:** Tank Mix with PRINCEP 80 W Sulfazine Weed Killer — For Top Kill and Residual Control of Annual Broadleaf Weeds and Grasses and for Suppression of Perennial Weeds — For broadcast application apply  $1\frac{1}{2}$  to 2  $\frac{2}{3}$  qts. GRAMOXONE paraquat per acre and PRINCEP 80 W at the following rates per acre:

Crop	Rate PRINCEP 80 W Per Sprayed Acre	Precautions
Almonds and Peaches (California Only)	1 $\frac{1}{2}$ -2 $\frac{2}{3}$ lbs. in 2-4 ft. band on each side of tree row. 1 $\frac{1}{2}$ lbs. provides residual control of burclover, common chickweed, wild mustard and shepherdspurse.	Do not treat trees established less than 3 years. Do not treat Mission variety of almonds. Do not apply to almond trees propagated on plum root stalks. Do not replant almonds or peaches in treated soil. Do not apply on gravelly sand or loamy sand soil or on soil with less than 1% organic matter. Do not treat areas where water will accumulate.
Apples Pears Sour Cherries (Michigan Only) Walnuts (California Only)	2 $\frac{1}{2}$ -5 lbs.	Do not apply to sandy soil. Leveling and furrowing operations after application will lessen effectiveness of weed control.
Peaches (Arkansas, Louisiana, Missouri, Oklahoma, Texas and states East of the Mississippi River)	2-5 lbs.	Do not apply to sandy or gravelly soil.
Grapes (California Only)	2 $\frac{1}{2}$ -6 lbs.	Do not use in vineyards established less than 3 years.

# Rates

Crop	Rate PRINCEP 80 W Per Sprayed Acre	Precautions
Oranges (California Only) Except Imperial, Coachella and Palo Verde Valleys (Florida Only) — Bedded	2 $\frac{1}{2}$ -5 lbs.  4 lbs.	Do not use in nurseries. To avoid possible injury, do not apply to trees under stress from freeze damage for one year following the freeze.

Use the low rate of PRINCEP 80 W on coarse textured soils and low organic matter soils. Use the high rate on fine textured soils and high organic matter soils. Apply as a tank mix in 50 to 200 gals. of water per acre to the orchard floor avoiding contact with fruit, foliage or stems. Add ORTHO X-77 Spreader (non-ionic) at 8 to 32 fl. oz. per 100 gals. diluted spray. Apply when weeds and grasses are succulent and the new growth is from 1 to 6 inches tall. For band applications or spot applications around trees, reduce the broadcast rate and the amount of water in proportion to the area actually sprayed.

Make only one application per year. Apply in orchards where trees have been established one year or more. Do not spray under windy conditions and use a shield for young trees. Do not apply to almonds and walnuts when nuts are on the ground during the harvest period. Do not allow animals to graze treated areas. Refer to the PRINCEP 80 W Sulfazine label for general information, caution and warning statements.

**HOPS (Washington, Oregon, and Idaho Only):** For Kill of Annual Bluegrass, Ryegrass, Barnyardgrass, Pigweed and Chickweed — Apply as a directed spray in the interspaces and around the base of hop plantings using  $\frac{1}{2}$  qt. GRAMOXONE paraquat in 20 to 100 gals. water per acre to thoroughly cover weeds and grasses. Add ORTHO X-77 Spreader (non-ionic) at 8 to 32 fl. oz. per 100 gals. spray mix. Do not apply around hop vines less than 10 ft. tall. Apply when weeds and grasses are succulent and growth is from 1 to 6 inches tall. Retreatment or spot treatment may be necessary. For Suckering and Stripping (Cascade, Yakima Cluster and Bullion Varieties Only): Spray only basal 2 ft. of vines using  $\frac{1}{2}$  qt. in 20 to 100 gals. water per acre. Add ORTHO X-77 Spreader (non-ionic) at 8 to 32 fl. oz. per 100 gals. spray mix. Do not apply to hop vines less than 10 ft. tall. Repeat as necessary. CAUTION: Do not apply more than 3 times per season. Do not apply within 14 days of harvest. Do not allow spray to contact green stems, foliage, flowers, or cones, as injury may result. Do not allow animals to graze in treated hopyards. Hop vine refuse and silage may be fed to livestock.

**GUAVA —** Apply as directed spray at 2  $\frac{2}{3}$  qts. GRAMOXONE paraquat per sprayed acre in 50 to 200 gals. to thoroughly cover the weeds and grasses. Add ORTHO X-77 Spreader (non-ionic) at 8 to 32 fl. oz. per 100 gals. Apply when the weeds and grasses are succulent and the new growth is from 1 to 6 inches high. For mature woody weeds, late germinating weeds and grasses and for perennials — retreatment or spot treatment may be necessary. CAUTION: Do not allow spray to contact green stems, fruit or foliage as injury may result. Do not spray under windy conditions and use a shield for young trees. Do not allow animals to graze on treated areas.

1 $\frac{1}{3}$ -2 $\frac{2}{3}$

1 $\frac{1}{3}$

1 $\frac{1}{3}$

2 $\frac{2}{3}$

# Rates

2 2/3

**PASSION FRUIT**—Apply as a directed spray at 2 2/3 qts. GRAMOXONE paraquat per sprayed acre in 50 to 200 gals. to thoroughly cover the weeds and grasses. Add ORTHO X-77 Spreader (non-ionic) at 8 to 32 fl. oz. per 100 gals. Apply when weeds and grasses are succulent and the new growth is from 1 to 6 inches high. For mature woody weeds, late germinating weeds and grasses and for perennials—retreatment or spot treatment may be necessary. **CAUTION:** Do not allow spray to contact green stems, fruit or foliage as injury may result. Do not spray under windy conditions and use a shield for young vines. If bark is still green, wrap vine prior to application to prevent injury. If application is to be made during harvesting season, apply GRAMOXONE paraquat only after picking fruits off the ground. Do not allow animals to graze on treated areas.

1 1/3 - 2 2/3

**PINEAPPLES:** For Kill of Annual Broadleaf Weeds and Grasses and Top Kill and Suppression of Perennials—Apply as a directed spray using 1 1/3 to 2 2/3 qts. GRAMOXONE paraquat in 100 to 200 gals. water per sprayed acre to thoroughly cover the weeds and grasses. Add ORTHO X-77 Spreader (non-ionic) at 8 to 32 fl. oz. per 100 gals. Apply when weeds and grasses are succulent and new growth is from 1 to 6 inches high. Retreatment may be necessary on more mature weeds. Do not apply within 20 days of harvest.

1 1/3 - 2 2/3

**SMALL FRUITS** (Blackberries, Boysenberries, Raspberries, Blueberries)—For Kill of Annual Broadleaf Weeds and Grasses and for Top Kill and Suppression of Perennial Weeds in the Interspaces and Around the Base of Bushes—Apply as a coarse directed spray at 1 1/3 to 2 2/3 qts. GRAMOXONE paraquat per sprayed acre in 50 to 200 gals. water to thoroughly wet the weeds and grasses. Add ORTHO X-77 Spreader (non-ionic) at 8 to 32 fl. oz. per 100 gals. water. Apply before emergence of new canes or shoots as injury to those canes or shoots can result. Apply as a coarse spray to avoid drift injury from fine spray mist.

1 1/3

**STRAWBERRIES:** Postemergence Directed Spray—For Control of Emerged Annual Broadleaf Weeds and Grasses and for Top Kill and Suppression of Emerged Perennial Weeds Between the Rows After Crop Plant Emergence or Establishment—Apply 1 1/3 qt. GRAMOXONE paraquat per sprayed acre in 20 to 60 gals. spray mix. Apply with conventional ground equipment directing spray between the rows and using shields to prevent spray contact with crop plants. Add ORTHO X-77 Spreader (non-ionic) at 8 fl. oz. per 100 gals. spray mix. For best results, apply when weeds and grasses are succulent and weed growth is 1 to 6 inches high. Weeds and grasses emerging after application will not be controlled. Do not allow spray to contact strawberry plants as injury or excessive residues may result. Do not apply more than 3 times per crop season. Do not apply within 21 days of harvest. Do not graze livestock in treated areas.

1 1/3 - 2 2/3

**GRAIN SORGHUM:** Postemergence Directed Spray—For Kill of Emerged Crabgrass and Pigweed 3 inches or Less in Height—(1 1/3 to 2 2/3 qts. GRAMOXONE paraquat in 20 to 40 gals. water per sprayed acre. Use higher gallonage of water for larger weeds. For band applications, 1 1/3 qt. GRAMOXONE paraquat will cover 2 land or crop acres when a 20 inch band is treated in 40 inch rows. Treat when grain sorghum is naturally standing 12 inches tall or more. Add ORTHO X-77 Spreader (non-ionic) at 1 qt. per 100 gals. of spray. Do not exceed 30 psi; high pressure contributes to spray drift.

1 1/3

For best results, apply GRAMOXONE paraquat at 1 1/3 qt. per sprayed acre to grass and weeds less than 2 inches tall. Grass and weeds 2 to 3 inches tall should be sprayed with 2 2/3 qts. of GRAMOXONE paraquat per sprayed acre. Use precision application equipment with spray

# Rates

nozzles mounted on skid shoes, oiling shoes, fenders, or cultivators with gauge wheels and adjusted so that only the lower 3 inches or less of the sorghum stalk is sprayed. For best coverage on single rows, use 4 flat fan nozzles per row, 2 nozzles on each side of the row. The 2 forward nozzles should point forward and downward, and rear nozzles should point to the rear and downward. For double row sorghum use one skid between the two rows with one nozzle spraying backward and downward.

Some sheath and lower leaf spotting and desiccation will occur. Basal spotting does not penetrate beneath outer sheath. Degree of injury is related to precision of application and wind velocity. Do not spray under windy conditions.

**FIELD CORN:** Postemergence Directed Spray Using GRAMOXONE paraquat Alone or GRAMOXONE paraquat + Alazine Tank Mix—For Control of Emerged Annual Broadleaf Weeds and Annual Grasses Less than 4 inches Tall—Apply 1 1/3 qt. GRAMOXONE paraquat per acre in 20 to 40 gals. of spray mix. Apply when corn plants are at least 10 inches tall. Corn plants shorter than 10 inches may be injured and not recover. Corn height measured from soil surface to top of whorl. Apply with directed spray application equipment. Arrange nozzles to spray no higher than the lower 3 inches of corn stalks to provide for maximum contact of weeds, with minimum contact of corn plants to prevent excessive sheath and lower leaf spotting and desiccation. Add 1 qt. of ORTHO X-77 Spreader (non-ionic) per 100 gals. of spray. Do not mix with liquid fertilizer. For improved control of weeds, especially broadleaves, Tank Mix GRAMOXONE paraquat and AATREX: Add 3/4 to 1 1/4 lbs. of AATREX 80 W or 1 to 2 pts. of AATREX 4L in combination with 1 1/3 qt. GRAMOXONE paraquat per acre. Add AATREX 80 W or AATREX 4L to spray tank first, mixing thoroughly in water. Then add GRAMOXONE paraquat and surfactant. Constant agitation recommended at all times. Refer to AATREX labels for limitations and cautions.

1 1/3

Do not graze treated areas or feed treated forage to livestock.

**CORN:** For use in the USDA Witchweed eradication program to kill grassy weeds. Apply 1 1/3 qt. GRAMOXONE paraquat in 10 to 20 gals. spray per acre. Add ORTHO X-77 Spreader (non-ionic) at 8 fl. oz. per 100 gals. spray mix. Apply as a spray directed onto the grassy weeds at the base of the corn stalks in the hills or row. Initiate sprays in early July and repeat in early August if regrowth of grassy weeds occurs. Do not graze livestock in treated area.

1 1/3

1 1/3

**SOYBEANS:** Postemergence Directed Spray—For Control of Seedling Johnsongrass, Crabgrass, Goosegrass, Brachiaria, Echinochloa spp. (Texas Millet), and Pigweed less than 2 inches tall apply GRAMOXONE paraquat at 1 1/3 qt. (0.63 lb. active) per acre. Use proportionately less for band treatment...for example on 40 inch rows and 16 inch band apply 1 1/3 qt. GRAMOXONE paraquat to 80 acres. For 2 to 4 inch grass and 2 to 3 inch pigweed apply GRAMOXONE paraquat at 1 1/3 qt. (1.25 lb. active) per acre...for example on 40 inch rows and 16 inch band apply 1 1/3 gal. GRAMOXONE paraquat to 40 acres. Soybeans should be 8 inches tall at first application. If needed, make second application 7 to 14 days later. Do not treat more than twice.

5 1/3

1 1/3

10 2/3

1 1/3

Apply 20 gals. spray mix per treated acre. Use proportionately less for band treatments...for example 8 gals. spray mix per 16 inch band on 40 inch rows.

For best coverage, use 4 flat fan nozzles per row, 2 nozzles on each side of row. The two forward nozzles should point forward and downward, and rear nozzles should point to the rear and downward. Do not exceed 30 psi; high pressure contributes to drift. Adjust nozzles to spray no higher than the lower three inches of the soybean plant. Do not treat if soybeans

## Rates

are below 8 inches tall; soybeans treated topically will be killed. Add ORTHO X-77 Spreader (non-ionic) at 1 to 2 qts. per 100 gals. of spray. Do not graze treated areas or feed treated forage to livestock.

**SUGARCANE** — Directed Spray: For Kill of Emerged Annual Broadleaf Weeds and Grasses and for Top Kill of Perennials — Apply as a shielded or directed spray when weeds are 2 to 6 inches high. Avoid contact with cane foliage to prevent serious leaf burn and reduced yields. Make a second and final application, if necessary, when new weed growth is 2 to 6 inches high. Add ORTHO X-77 Spreader (non-ionic) at 8 fl. oz. per 100 gals. spray mix. Florida Only — Apply 1/2 qt. GRAMOXONE paraquat in 50 to 100 gals. of water per acre. For optimum results, apply early in the season (March-April) when weeds are small. Do not apply after June 1st as cane growth may be stunted and yields reduced.

Hawaii Only — Apply 1/2 qt. GRAMOXONE paraquat in 20 to 200 gals. of water per acre. Do not apply after cane rows have closed in.

Louisiana Only — Apply 1/2 to 1 qt. GRAMOXONE paraquat in 20 to 200 gals. of water per acre. For tiller control, apply when tillers are less than 18" high. Use the higher rate of GRAMOXONE paraquat with heavier weed infestations or tiller growth. Do not apply within 30 days of harvest.

**TOMATOES AND PEPPERS** (Middle Atlantic, Southeast, South Central Regions, and Southwest to the Western Boundary of Texas): Postemergence Directed Spray — For Kill of Emerged Annual Broadleaf Weeds and Grasses and for Top Kill and Suppression of Emerged Perennial Weeds between Rows after Crop Plant Emergence or Establishment — Apply as directed spray using 1/2 qt. GRAMOXONE paraquat per

sprayed acre in 20 to 100 gals. spray mix. Apply with conventional ground equipment directing spray between the rows and using shields to prevent spray contact with crop plants. Add ORTHO X-77 Spreader (non-ionic) at 8 fl. oz. per 100 gals. spray mix. Apply when weeds and grasses are succulent and weed growth is 1 to 6 inches high. Weeds and grasses emerging after application will not be controlled. Do not allow spray to contact tomato or pepper plants as injury or excessive residues may result. Do not apply more than 3 applications per crop season. Do not allow animals to graze on treated areas.

## DORMANT USE

**PEPPERMINT, SPEARMINT:** For Suppression of Weeds Such as Italian Ryegrass, Prickly Lettuce, Groundsel, Chickweed, Downy Brome and Bluegrasses During the Dormant Season — Apply 2 to 4 pts. per acre as a broadcast spray in 25 to 65 gals. spray mix. Use the higher rate with heavier weed infestations. Add ORTHO X-77 Spreader (non-ionic) at 8 fl. oz. per 100 gals. spray mix. Apply when peppermint or spearmint is dormant and before spring growth begins. Do not apply to weeds which are greater than 6" tall. Do not apply more than 4 pts. per acre per dormant season as injury or excessive residues may result. For Improved Contact Activity and Residual Control of Italian Ryegrass, Prickly Lettuce and Groundsel — Add 1 to 2 lbs. of SINBAR\* (Terbacil) Weed Killer as a tank mix. Use the higher tank mix rate with heavier weed infestations. Apply tank mix treatment no more than once per season. Use a minimum of 25 gals. spray mix per acre. Refer to the SINBAR label for specific recommendations and cautions.

## Rates

1 1/2 - 2 3/4

**RHUBARB:** For Kill of Emerged Annual Broadleaved Weeds and Grasses and for Top Kill and Suppression of Emerged Perennial Weeds in Dormant Rhubarb — Apply 1/2 to 1 qt. GRAMOXONE paraquat per sprayed acre by ground application equipment. Use 50 to 150 gals. spray mix per acre. Add ORTHO X-77 Spreader (non-ionic) at 8 to 32 fl. oz. per 100 gals. spray mix. Use the higher rate with heavier weed infestations. Apply during the dormant season before buds in crown begin to grow. Do not make more than two applications per season.

## NONCROP USES

**NONCROP AREAS** (Public Airports, Electric Transformer Stations and Substations, Pipeline Pumping Stations, Around Commercial Buildings, Storage Yards and Other Installations, Fence Lines, and Similar Noncrop Areas) — For the Control of Annual Broadleaved Weeds and Grasses (such as Burdock, Chickweed, Filaree, Groundsel, Nettle, Pigweed, Plantain, Puncturevine, Purslane, Red Clover, Shepherds-purse, Thistle, Wild Mustard, Wild Radish, Wild Oats, Bluegrass, Cheatgrass, Crabgrass) and Top Kill and Suppression of Perennial Weeds (such as Bermudagrass, Johnsongrass, and Morningglory) — 1/2 qt. GRAMOXONE paraquat per acre. Apply for full coverage and thorough weed contact (50 to 100 gals. diluted spray per acre). Best results are obtained when applications are made to young, succulent weeds and grasses. Mature, woody weeds are less susceptible. Repeat as needed. Add ORTHO X-77 Spreader (non-ionic) at 8 oz. per 100 gals. GRAMOXONE paraquat is compatible with many residual herbicides. Avoid spray contact with foliage or fruit of food crops and ornamentals.

## RESIN SOAKING

**RESIN SOAKING IN PINES** (Loblolly, Shortleaf, Longleaf, Slash, Virginia, Pond, Pitch, and Spruce Pines):

**Tree Selection** — Select trees to be treated from stands on sites not subject to periods of extreme drought stress as the desiccating effect of GRAMOXONE paraquat to pines is accentuated during such periods, causing a reduction in the amount of oleoresin deposited in the xylem. Select trees to be treated from vigorous, non-stagnated stands, either natural or planted. In stagnated stands or commercial timber stands, plan treating with GRAMOXONE paraquat not sooner than three years after a commercial thinning.

**Application Directions** — Apply GRAMOXONE paraquat diluted in water (0.2% to 5% cacon, wt./wt. basis, depending on the type of treatment method) to a suitable wound in the tree trunk to bring the treatment into contact with the xylem (sapwood). One of the following methods may be used:

**Bark Streaks or Cuts:** This type of wound is made using a standard or rotary bark hack or a chainsaw chipping tool employed in naval stores work to remove a single one-inch wide streak of bark about 1 to 2 feet from ground level. The total length should not exceed 1/3 of the tree circumference. Multiple streaks or cuts can result in serious girdling of the trunk and premature death of the tree. A coarse spray (about 2 to 6 ml.) of GRAMOXONE paraquat solution (1% to 5% cacon, wt./wt. basis) should be applied to runoff to the exposed xylem, using a plastic acid bottle or a low-pressure sprayer. Wear rubber gloves when using the acid bottle. The amount of spray required per cut depends on tree circumference and the

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## Rates

length of cut or streak 1/2 of circumference! For a 9-inch diameter tree, 3 ml. of spray will cover the 1 inch wide streak. Using 3 ml. of a 2% or 4% GRAMOXONE paraquat solution will result in application of 60 or 120 mg. GRAMOXONE paraquat per streak.

**Tree Injection:** Pressure injections of 1% to 4% GRAMOXONE paraquat solution (cation, wt./wt. basis) should be applied beneath the bark and just beneath the cambium layer. Injections should be made 1 to 2 inches apart around 1/2 of the tree circumference or no closer than 3 inches apart all around the tree. From 0.2 ml. to 0.4 ml. of GRAMOXONE paraquat solution is applied per injection. Using 2% to 4% GRAMOXONE paraquat solution, this results in 36 to 144 mg. GRAMOXONE paraquat applied per 9-inch diameter tree, for holes spaced 1 inch apart around 1/2 of the tree or 3 inches apart all around the tree.

**Bore Holes:** 1/4 to 1/2 inch diameter holes 2 to 6 inches deep, depending on tree diameter, are bored sloping slightly downward and tangentially inward rather than directly towards the center of the tree. Solutions of 0.3% to 5% GRAMOXONE paraquat can be used. Lower concentrations (0.3%) are usually applied at higher volumes of 15 to 35 ml. per tree, resulting in application of 45 to approximately 100 mg. GRAMOXONE paraquat per tree. Using 2% to 4% solutions and applying 5 ml. per single hole per tree results in application of 100 or 200 mg. GRAMOXONE paraquat per tree. Bore hole applications in the range of 45 to 100 mg. GRAMOXONE paraquat per tree have resulted in effective oleoresin induction.

**Time of Treatment:** Resin soaking can occur from treatments made any time of the year; however, cool season treatments under non-drought conditions usually result in less severe pine beetle infestations and longer tree life.

**Interval Between Treatment and Tree Harvest:** The interval between application of GRAMOXONE paraquat and tree harvest should be a minimum of 6 months and preferably from 12 to 24 months. Intervals of over 6 months may not be possible under conditions of drought or serious pine beetle attacks, which may make early harvest necessary. The GRAMOXONE paraquat treatment may encourage beetle attack, or may cause premature death of the tree. Desiccation of the xylem tissue, rather than the desired resin soaking, may occur, and is more likely at higher dosage rates.

**Effect on Stem Growth:**

GRAMOXONE paraquat treatment can result in reduced stem growth during the interval between treatment and tree harvest.

*1.5*

Dilution Table for GRAMOXONE paraquat (1.5 lbs. cation per gallon) 1/2

Concentration of Cation Desired (Wt./Wt. Basis)	To 1 Gal. of GRAMOXONE paraquat, add the following No. Gals. of Water:
0.2%	118.8
0.5%	46.8
1.0%	22.9
2.0%	10.9
3.0%	6.9
4.0%	4.9
5.0%	3.7

## WORKER SAFETY RULES/ REENTRY STATEMENTS

USE STRICTLY IN ACCORDANCE WITH DANGER STATEMENTS AND DIRECTIONS, AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.

DO NOT get on skin, eyes or clothing.

DO NOT inhale spray mist.

WASH SPLASHES from skin and eyes immediately.

REMOVE and wash contaminated clothing.

WASH before eating, smoking and drinking.

WEAR full face shield, rubber gloves and apron and waterproof footwear when handling or mixing concentrate.

WEAR waterproof footwear and clothing when spraying or when contacting vegetation wet with spray.

DO NOT enter treated areas without protective clothing until sprays have dried.

AVOID working in spray mist. If there is risk of exposure wear goggles and approved face mask capable of filtering spray droplets.

KEEP all unprotected persons out of operating areas or vicinity where there may be danger of drift.

Certain states may require more restrictive reentry intervals; consult your State Department of Agriculture for further information.

Written or oral warnings regarding use of protective clothing and accidental exposure must be given to workers who are expected to be in treated areas or in areas about to be treated.

**IMPORTANT:** The effect of swallowing Paraquat is far more severe than that which usually results from skin contact or inhalation of spray mist. No opportunity for mist or product to cause serious injury or death should arise when used in strict compliance with these rules but the opportunity may arise in case of gross violations so strictly follow all these rules as if your life depends on it.

## ENVIRONMENTAL SAFETY CAUTIONS

### WILDLIFE

This product is toxic to wildlife. Birds and other wildlife in treated areas may be killed. Do not apply directly to water.

### DRIFT

GRAMOXONE *SUPER* is a contact herbicide that kills all green plant tissue. Do not apply under conditions involving possible drift to food, forage, or other plantings that might be damaged or the crops thereof rendered unfit for sale, use, or consumption. Do not apply when weather conditions favor drift from areas treated. For aerial applicators use, do not apply during periods of thermal inversion to avoid drift.

### CHEMICAL HAZARD

This product reacts with aluminum to produce hydrogen gas which may form a highly combustible gas mixture. Such gas could flash or explode, causing serious personal injury, if ignited by open flame, spark, welder's torch, lighted cigarette, or other ignition source. Do not mix or store in containers, spray tanks, nurse tanks, or such systems made of aluminum or having aluminum fittings. After dilution with water to spray concentrations, spray systems made of, or containing aluminum parts, may be used but should not be used for extended (overnight) storage.

### EQUIPMENT/CONTAINERS

Flush all spray equipment with water after use each day. GRAMOXONE *SUPER* is corrosive to aluminum. Aluminum spray equipment and aluminum aircraft structures that are exposed to spray solution or spray drift should be flushed thoroughly with water immediately after use.

## STORAGE AND DISPOSAL

### PROHIBITIONS

Do not contaminate water, food or feed by storage, disposal or cleaning of equipment. Open dumping is prohibited.

### STORAGE

Store at temperatures above 32°F. Do not contaminate feed, foodstuffs or drinking water. Do not store next to feed or food, or transport in or on vehicles containing foodstuffs or feeds. For help with any spill, leak, fire or exposure involving this material, call CHEMTREC 800/424-9300.

### PESTICIDE DISPOSAL

This product is acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

### CONTAINER DISPOSAL

See Container Label For Container Disposal Directions.

**CONDITIONS OF SALE:** ICI Americas Inc. (ICI) warrants that this material conforms to the chemical description on the label and is reasonably fit for use as directed hereon. ICI neither makes, nor authorizes any agent or representative to make, any other warranty of FITNESS or MERCHANTABILITY, guarantee or representation, express or implied, concerning this material.

2. Critical and unforeseeable factors beyond ICI's control prevent it from eliminating all risks in connection with the use of chemicals. Such risks include, but are not limited to, damage to plants and crops to which the material is applied, lack of complete control, and damage caused by drift to other plants or crops. Such risks occur even though the product is reasonably fit for the uses stated hereon and even though label directions are followed. Buyer and user acknowledge and assume all risks and liability (except those assumed by ICI under 1 above) resulting from handling, storage and use of this material.



ICI Americas Inc.  
Agricultural Chemicals Division  
Wilmington, Delaware 19837

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