



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.
ONE SWALLOW CAN KILL!**

SUPPLEMENTAL PAMPHLET

DIRECTIONS FOR USE.
READ WORKER SAFETY RULES

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



ORTHO

'GRAMOXONE' CL

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

A Weed and Grass Killer · Harvest Aid Chemical.

Active Ingredient

Paraquat dichloride (50% active ingredient)

Inert Ingredients

Water, 50% (50% active ingredient)



DANGER

**CAN KILL IF SWALLOWED
HARMFUL TO THE EYES AND SKIN**

FIRST AID TREATMENT	
IF SWALLOWED Do not induce vomiting. Give 1-2 glasses of water or milk. Call a physician immediately.	EYE CONTAMINATION Flush eyes with water for at least 15 minutes. Call a physician immediately.
SKIN CONTAMINATION Wash skin with soap and water for at least 15 minutes. Call a physician immediately.	INHALATION Move to fresh air. Call a physician immediately.
Notes: Physicians	

WASH AND DESTROY CONTAINER WHEN EMPTY. NEVER REUSE.

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 FRONT PANEL AND WORKER SAFETY RULES

NOTE Do not use Around Home Gardens, Schools, Recreational Parks or Playgrounds

Do not combine ORTHO GRAMOXONE CL with liquid fertilizers other than except as specified below. DO NOT combine with suspension type liquid fertilizers as the activity of Paraquat will be reduced.

PREPLANT OR PREEMERGENCE USES

Apply when the weeds and grasses are succulent and growth is from 1 to 6 inch. 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).

Apply 1 to 2 qts. 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 oz. per 100 gals. spray. Apply 50 to 100 gals. spray 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. Crop plants emerged at time of application will be injured. Do not apply within 18 months before harvest.

Apply 1 to 2 qts. per acre as a single broadcast application in 20 to 60 gals. water. 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 oz. per 100 gals. spray.

Apply 1 to 2 qts. 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 5 to 10 gals. water per acre. Add ORTHO X-77 Spreader (non-ionic) at 8 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.

Apply 1 to 2 qts. 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 5 to 10 gals. water per acre. Add ORTHO X-77 Spreader (non-ionic) at 8 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 apply within 18 months before harvest.

Apply 1 to 2 lbs. ORTHO GRAMOXONE CL plus 1 1/2 to 2 lbs. Atrazine 80 Wettable per acre as a broadcast 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 ORTHO GRAMOXONE CL 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.

Apply 1 to 2 lbs. ORTHO GRAMOXONE CL plus 1 1/2 to 2 lbs. Atrazine 80 Wettable per acre as a broadcast 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 ORTHO GRAMOXONE CL 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.

Apply 1 to 2 lbs. ORTHO GRAMOXONE CL plus 1 1/2 to 2 lbs. Atrazine 80 Wettable per acre as a broadcast 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 ORTHO GRAMOXONE CL 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.

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

Apply 1 to 2 lbs. ORTHO GRAMOXONE CL plus 1 1/2 to 5 lbs. BLADEX 80 W depending upon 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 ORTHO GRAMOXONE CL 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. BLADEX Shell trademark.

Apply 1 to 2 lbs. ORTHO GRAMOXONE CL plus 2 to 3 lbs. 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 ORTHO GRAMOXONE CL 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.

Apply 1 to 2 lbs. ORTHO GRAMOXONE CL plus 1 1/2 to 2 lbs. Atrazine 80 W or 1 1/2 to 3 1/2 lbs. Atrazine 40 plus 1 1/2 to 2 lbs. IGRAN 80 W per acre as a broadcast ground spray before, during or after planting but before crop emergence. Add Atrazine 80 W or Atrazine 40 to spray tank first, mixing thoroughly in water. Then add IGRAN 80 W. Use low rates of Atrazine and IGRAN on light soils, and the higher rates on heavy soils. Refer to Atrazine and IGRAN labels for directions, limitations, cautions and for a list of weeds controlled by preemergence activity of Atrazine and IGRAN. 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 and IGRAN to spray tank first, mixing thoroughly in carrier. Then add ORTHO GRAMOXONE CL 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.

Apply 1 to 4 lbs. ORTHO GRAMOXONE CL plus 1 1/2 to 2 lbs. Atrazine 80 W or 1 1/2 to 3 1/2 lbs. Atrazine 40 plus 1 1/2 to 2 lbs. IGRAN 80 W per acre as a broadcast ground spray before, during or after planting but before crop emergence. Add Atrazine 80 W or Atrazine 40 to spray tank first, mixing thoroughly in water. Then add IGRAN 80 W. Use low rates of Atrazine and IGRAN on light soils, and the higher rates on heavy soils. Refer to Atrazine and IGRAN labels for directions, limitations, cautions and for a list of weeds controlled by preemergence activity of Atrazine and IGRAN. 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 and IGRAN to spray tank first, mixing thoroughly in carrier. Then add ORTHO GRAMOXONE CL 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.

Use this tank mixture for control of emerged annual weeds. Suppression of many emerged perennial weeds in the preemergence control of many annual weeds when soybeans will be planted directly in 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 to corn.

For weeds in controlled emergence, see the LASSO or LASSO EC and LOROX 50 WP labels. Refer to the LASSO or LASSO EC and LOROX 50 WP labels for preemergence statements, application restrictions, rates which are dependent upon soil textures, directions, limitations, and cautions.

Apply 1 pt. LASSO ORTHO GRAMOXONE CL 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 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 50 WP to the spray tank while agitating, then add the LASSO or LASSO EC, ORTHO GRAMOXONE CL and ORTHO X 77 Spreader (non-ionic). Continue agitation during application. LASSO: trademark of Monsanto Company. LOROX: trademark of DuPont.

Apply 1 pt. ORTHO GRAMOXONE CL plus 1 to 3 lbs. LOROX: Linuron Weed Killer 50 Wettable on sandy loam 1 1/2 to 4 lbs. on silt loam, 1 1/2 to 5 lbs. on clay loam soils per sprayed acre as a band treatment over the crop row or as a broadcast treatment after planting, before emergence of the crop. Apply 5 to 10 gals. spray mix per acre. 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 ORTHO GRAMOXONE CL 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. Refer to the LOROX Linuron Weed Killer label for cautions.

This herbicide tank mixture WILL NOT CONTROL Rhizome Johnsongrass. LOROX: trademark of DuPont.

(This tank mix should be used instead of ORTHO GRAMOXONE CL - LOROX or ORTHO GRAMOXONE CL - SENCOR when better pre-emergence control of crabgrass and foxtail is desired.)

Apply 1 to 2 pts. ORTHO GRAMOXONE CL plus 2 to 2 1/2 qts. LASSO (4 lb. gal. EC) plus 1/2 to 2 lbs. SENCOR 50 WP per acre as a preemergence broadcast ground spray. Refer to LASSO and SENCOR 50 WP 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 pt. rate of ORTHO GRAMOXONE CL 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 50 WP to the spray tank first and mix thoroughly. Then add LASSO followed by ORTHO GRAMOXONE CL and ORTHO X 77 Spreader (non-ionic). Constant agitation is recommended at all times. Do not use treated vines for feed or forage. LASSO: trademark of Monsanto Company. SENCOR: trademark of the Parent Company of Farbentfabriken Bayer GmbH, Leverkusen.

Instead of ORTHO GRAMOXONE CL, use LOROX: Linuron Weed Killer 50 Wettable on sandy loam 1 1/2 to 4 lbs. on silt loam, 1 1/2 to 5 lbs. on clay loam soils per sprayed acre as a band treatment over the crop row or as a broadcast treatment after planting, before emergence of the crop. Apply 5 to 10 gals. spray mix per acre. 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 ORTHO GRAMOXONE CL 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. Refer to the LOROX Linuron Weed Killer label for cautions.

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 pt. per 100 gals. of diluted spray. Do not use treated vines for feed or forage.

Refer to the SENCOR 50 WP label for cautions, limitations and recommended rates for specific soil textures, and using minimum tillage equipment. It is important to observe the proper planting depth, as stated on the SENCOR label, so application is not made directly onto the soybean seed.

SENCOR: trademark of the Parent Company of Farbentfabriken Bayer GmbH, Leverkusen.

(This tank mix should be used instead of ORTHO GRAMOXONE CL - LASSO - SENCOR ORTHO GRAMOXONE CL - SENCOR or ORTHO GRAMOXONE CL - LOROX when longer residual control of foxtail and fall panicum is desired.)

Apply 1 qt. ORTHO GRAMOXONE CL plus 1 to 2 lbs. SURFLAN 75 WP plus 1/2 to 1 lb. SENCOR 50 WP or LEXONE 50 WP 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 50 WP or LEXONE 50 WP to the spray tank first and mix thoroughly. Then add SURFLAN 75 WP followed by ORTHO GRAMOXONE CL and ORTHO X 77 Spreader (non-ionic). Constant agitation is recommended at all times. Do not use treated vines for feed or forage.

SURFLAN: trademark of Elanco Products Company.

SENCOR: trademark of the Parent Company of Farbentfabriken Bayer GmbH, Leverkusen.

LEXONE: trademark of E. I. du Pont de Nemours & Co., Inc.

Apply 1 to 2 pts. per acre as a broadcast application in 30 to 100 gals. water. Add ORTHO X 77 Spreader (non-ionic) at 8 oz. per 100 gals. 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. Post-emergence cultivations should be performed as required to control subsequent weed and grass emergence.

ORTHOGRADEX: trademark of Farbentfabriken Bayer GmbH, Leverkusen.

Prepare the seedbed and allow weed seeds to germinate. When broadleaved weeds and annual grasses are at the 3 to 5 leaf stage apply 1 qt. 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 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.

PASTURE AND RANGE RESEEDING

Apply 1 pt. per acre 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. ORTHO X 77 Spreader (non-ionic) per 100 gals. spray mix. Do not pasture or mow for hay until 140 days after treatment.

HARVEST-AID USES

Apply 1 qt. per acre 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. ORTHO X 77 Spreader (non-ionic) per 100 gals. spray mix. Do not pasture or mow for hay until 140 days after treatment.

Apply 1 to 2 pts. per acre. When foliage is dense, use 2 applications of 1 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.

Apply 3 to 10 gals. spray mix per acre. Use ORTHO X-77 Spreader (non-ionic) at 1 qt. per 100 gals. spray mix. Do not apply during periods of thermal inversion to avoid drift.

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 1 qt. per 100 gals. spray mix.

May apply as split application. Do not pasture lactating dairy animals. Do not pasture livestock in treated areas within 15 days after treatment. Remove livestock from treated areas 30 days before slaughter. Do not feed gin trash to livestock. Do not apply cotton within 3 days before harvest. Repeat application if necessary. Do not make more than 2 applications or exceed a total of 2 pts. per acre. When combined with phosphate defoliant, observe livestock cautions listed on the phosphate label. When combined with chlorate defoliant, 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 Apply 1 qt. 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 VINE Apply 1 to 2 pts. per acre. Use the 2 pt. rate where vine growth is vigorous or where quick vine kill is desired or 2 applications of 1 pt. when vine growth is dense. Use the 1 pt. rate on maturing vines. Apply in 50 to 100 gals. water per acre with thorough coverage. Add 8 oz. of ORTHO X-77 Spreader (non-ionic) per 100 gals. water. Do not make more than 2 applications with a minimum of 5 days between applications. Do not apply ORTHO GRAMOXONE CL 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 ORTHO GRAMOXONE CL for desiccating potato vines when the potatoes are to be stored or used for seed as this use may result in tuber decomposition and failure of seed pieces to germinate and grow normally.

SOYBEAN HARVEST AID Apply 1/2 to 1 pt. per acre on Broadleaf Weeds and Grasses. Use high rate on Cocklebur. Add 1 qt. ORTHO X-77 Spreader (non-ionic) per 100 gals. spray mix. Apply in 20 to 40 gals. spray per acre. Apply when at least 65% of the seed pods have reached a mature brown color or when seed moisture is 30% or less. Do not apply when soybean plants are mature. If beans are fully developed, at least 1/2 of leaves have dropped, and leaves left on plants are turning yellow. Immature soybeans will be injured. Mature cockleburs, especially drought stressed plants, are tolerant to Paraquat and desiccation will not be complete. Do not pasture livestock within 15 days of treatment. Remove livestock from treated fields at least 30 days before slaughter.

SUNFLOWER Apply 1 to 2 pts. ORTHO GRAMOXONE CL per acre in 5 gals. spray mix by air or in 20 to 40 gals. by ground application equipment. Use the higher rate when crop stands or weed infestations are heavy. Apply when the sunflower seeds reach physiological maturity (when the heads are yellow and bracts are turning brown) and harvest 7 to 21 days after application. Add ORTHO X-77 Spreader (non-ionic) at 1 qt. per 100 gals. water. Do not graze treated areas or feed treated forage to livestock.

DIRECTED SPRAYS

ORCHARDS, VINEYARDS, WOODS, AND OTHER AREAS Apply 1 to 2 pts. ORTHO GRAMOXONE CL per acre in 5 gals. spray mix by air or in 20 to 40 gals. by ground application equipment. Use the higher rate when crop stands or weed infestations are heavy. Apply when the sunflower seeds reach physiological maturity (when the heads are yellow and bracts are turning brown) and harvest 7 to 21 days after application. Add ORTHO X-77 Spreader (non-ionic) at 1 qt. per 100 gals. water. Do not graze treated areas or feed treated forage to livestock.

Apply as a directed spray at 1 to 2 qts. per sprayed acre in 50 to 200 gals. water. Use 20 to 50 gals. water for broadcast application over the weeds and grasses. Add ORTHO X-77 Spreader (non-ionic) at 8 oz. per 100 gals. water. Apply when

the weeds and grasses are succulent and the new growth is from 1 to 6 inches high. For mature woody weeds, green stalks, 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 or vines. Do not allow animals to graze on treated areas. Do not apply when nuts to be harvested are on the ground.

Apply as a directed spray at 2 qts. per sprayed acre in 50 to 200 gals. to thoroughly cover the weeds and grasses. Add ORTHO X-77 Spreader (non-ionic) at 8 oz. per 100 gals. water. 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.

Apply as a directed spray at 2 qts. per sprayed acre in 50 to 200 gals. to thoroughly cover the weeds and grasses. Add ORTHO X-77 Spreader (non-ionic) at 8 oz. per 100 gals. water. 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 vines. If bark is still green, wrap vine prior to application to prevent injury. If application is to be made during harvesting season, apply ORTHO GRAMOXONE CL only after picking fruits off the ground. Do not allow animals to graze on treated areas.

Apply as a directed spray using 1 to 2 qts. 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 oz. per 100 gals. water. 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.

Apply as a coarse directed spray at 1 to 2 qts. 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 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 to 2 pts. ORTHO GRAMOXONE CL in 20 to 40 gals. water per sprayed acre. Use higher gallonage of water for larger weeds. For band applications, 1 pt. ORTHO GRAMOXONE CL will cover 2 land or crop acres when a 20 inch band is treated in 40 inch rows. Treat when grain sorghum is mature, 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.

For best results, apply ORTHO GRAMOXONE CL at 1 pt. 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 pts. ORTHO GRAMOXONE CL per sprayed acre. Use precise application equipment with spray nozzles mounted on skid shoes, rolling shoes, tenders or cultivators with gauge wheels 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 and outer sheath. Degree of injury is related to pH of application and wind velocity. Do not spray under windy conditions.

Apply 1 pt. ORTHO GRAMOXONE CL 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 three inches of corn stalks to provide for maximum contact of weeds with the spray. Contact of corn plants to prevent excessive sheath and lower leaf spotting and desiccation. Add 1 qt. ORTHO X 77 Spreader (non-ionic) per 100 gals. of spray. Do not mix with liquid fertilizer.

Add 5% to 10% AATREX 80W or 1 to 2 qts. AATREX 4L to combine with 1 qt. ORTHO GRAMOXONE CL per acre. Add AATREX 80W or AATREX 4L to spray tank first making thorough mix with water. Then add ORTHO GRAMOXONE CL and stir until thoroughly mixed. Do not use AATREX at all times. Refer to AATREX labels for limitation and cautions.

Do not graze treated areas or feed treated forage to livestock. AATREX is a trademark of CIBA GEIGY.

For use in the USDA Wildweed eradication program for grassy weeds. Apply 1 qt. ORTHO GRAMOXONE CL or 10 to 20 gals. spray per acre. Add 1 lb. VISTIC per 100 gals. water. 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. VISTIC is a registered trademark of Hercules, Inc.

For control of seedling Johnsongrass, Crabgrass, Goosegrass, Brachiaria, Echinochloa sp. (Texas Millet) and pigweed less than 2 inches tall, apply ORTHO GRAMOXONE CL at 4 fl. oz. (0.63 lb. active) per acre. Use proportionately less for band treatment. For example on 40 inch rows and 16 inch band apply 1 gal. ORTHO GRAMOXONE CL to 80 acres.

For 2 to 4 inch grass and 2 to 3 inch pigweed apply ORTHO GRAMOXONE CL at 8 fl. oz. (1.25 lb. active) per acre. For example on 40 inch rows and 16 inch band apply 1 gal. ORTHO GRAMOXONE CL 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.

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 are below 8 inches tall; soybeans treated too early 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.

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.

NONCROP USES

Apply 1 to 2 qts. per acre. Apply for full coverage and thorough weed control about 100 gals. of water spray per acre. Best results are obtained when applied after corn harvest and before weeds and grasses mature. Weeds are less susceptible. Repeat as needed. Add ORTHO X 77 Spreader (non-ionic) at 1 to 2 qts. per 100 gals. of water. Apply with a spray gun or herbicide sprayer. Do not spray contact with the ground or other plants and animals.

RESIN SOAKING

Select trees to be treated from stands or sites not subject to periods of extreme drought stress. The desiccating effect of paraquat on 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 paraquat not sooner than three years after a commercial thinning.

Apply ORTHO GRAMOXONE CL diluted in water (0.2 to 5% cation 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:

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 paraquat solution (1 to 5% cation 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 length of cut or streak (1/3 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% paraquat solution will result in application of 60 or 120 mg. paraquat per streak.

Pressure injections of 1 to 4% 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 1/3 of the tree circumference or no closer than 3 inches apart all around the tree. From 0.2 ml. to 0.4 ml. of paraquat solution is applied per injection. Using 2% to 4% paraquat solution, this results in 36 to 144 mg. paraquat applied per 9-inch diameter tree for holes spaced 1 inch apart around 1/3 of the tree or 3 inches apart all around the tree.

1/4 to 5/8 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 0.2 to 5% 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. 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. paraquat per tree. Bore hole applications in the range of 45 to 100 mg. paraquat per tree have resulted in effective oleoresin induction.

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.

The interval between application of paraquat and tree harvest should be a minimum of six months and preferably from 12 to 24 months. Intervals of over six months may not be possible under conditions of drought or serious pine beetle attacks, which may make early harvest necessary. The 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.

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

Dilution Table for ORTHO GRAMOXONE CL (2 lbs. cation per gallon) To 1 Gal. of

Concentration of Cation Desired (Wt./Wt. Basis)	ORTHO GRAMOXONE CL, add the Following No. Gals. of Water
0.2	116.8
0.5	46.7
1.0	23.3
2.0	11.6
3.0	7.7
4.0	5.8
5.0	4.7