



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!**



ORTHO

PARAQUAT CL

SUPPLEMENTAL PAMPHLET

DIRECTIONS FOR USE. READ WORKER SAFETY RULES

**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.

Active Ingredient

Paraquat dichloride (1,1-dimethyl 4,4-bispyridinium dichloride)

By Wt.

29.1%

Inert Ingredients

Contains 2 lbs. Paraquat cation per gallon

70.9%



DANGER

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

FIRST AID TREATMENT

IF SWALLOWED

Do not induce vomiting. Do not take any food or drink. Get to a hospital as quickly as possible. PROMPT TREATMENT IS ESSENTIAL. Symptoms may be delayed.

SKIN CONTAMINATION

Remove contaminated clothing and wash thoroughly with soap and water. Wash skin when necessary. If exposed contact will cause severe irritation. Repeated contact may increase danger of absorption.

EYE CONTAMINATION

Flush eyes with water for at least 15 minutes. Get to a hospital as quickly as possible.

INHALATION

Get to fresh air as quickly as possible.

Exposure to Paraquat may cause irritation of the respiratory tract and may lead to pulmonary edema.

Note to Physicians: Paraquat is a highly toxic chemical. (EPA Reg. 40 CFR 155.55)

WASH AND DESTROY CONTAINER WHEN EMPTY. NEVER REUSE.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

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 Paraquat CL 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 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 Paraquat dilution as 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.

ASPARAGUS: Preplant or Preemergence—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.

COTTON: Preplant Treatment—Ground Application—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.

CORN, LETTUCE, MELONS, PEPPERS, SORGHUM, SUGAR BEETS, TOMATOES, SAFFLOWER: Preplant or Preemergence Treatment—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. **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 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 injured. Do not apply within 18 months before harvest.

BARLEY, WHEAT: Preplant and Preemergence Treatment—Apply 1 to 2 qts. per 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. **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 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 injured. Do not apply within 18 months before harvest.

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:

Apply 1 to 2 pts. ORTHO Paraquat CL plus 2 1/2 to 3 1/2 lbs. Atrazine 80 Wettable per acre as a broadcast spray before, during or after planting. Refer to Atrazine 80 Wettable label for directions, limitations and cautions. Add ORTHO X-77 Spreader (non-ionic) at 8 oz. per 100 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 Paraquat and surfactant. Constant agitation recommended at all times.

Paraquat plus Atrazine may be applied in liquid nitrogen and/or complete liquid fertilizer solutions when 25 or more gallons of dilute solution are applied per acre in combination with 1 to 2 pts. 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 Paraquat activity. Phosphate containing liquid fertilizer solutions will reduce the activity of Paraquat. When liquid fertilizers containing phosphorus are used with Paraquat, and a rapid kill is desired, use the high Paraquat label rate.

Tank-Mix with AATREX® 80 W and PRINCEP® 80 W:

Apply 1 to 2 pts. ORTHO Paraquat CL plus 1 1/4 to 2 1/4 lbs. PRINCEP 80 W plus 1 1/4 to 2 1/4 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, Paraquat 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.

Tank-Mix with BLADEX® 80 W:

Apply 1 to 2 pts. ORTHO Paraquat CL plus 1 1/4 to 5 lbs. BLADEX 80 W depending upon soil type, as a broadcast spray. Apply 20 to 60 gals. dil. spray per acre. Add ORTHO X-77 Spreader (non-ionic) at 8 oz. per 100 gals. diluted spray. Add BLADEX 80 W to spray tank first, mixing thoroughly in water. Then add 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. BLADEX® is a trademark of Monsanto Company.

Tank-Mix with LASSO® and Atrazine:

Apply 1 to 2 pts. ORTHO Paraquat CL (0.25 to 0.5 lb. active) plus 4 to 5 pts. LASSO (1.5 to 2.5 lbs. active) plus 1.25 to 2.5 lbs. Atrazine 80 Wettable (1.0 to 2.0 lbs. active) per treated acre prior to, during, or after planting, but before crop emergence. Use 20 to 60 gals. of diluted spray per treated acre. Add ORTHO X-77 Spreader (non-ionic) at 8 oz. per 100 gals. of diluted spray. Add the Atrazine to the spray tank while agitating, then add the LASSO, 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. LASSO® is a trademark of Monsanto Company.

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 to 2 pts. ORTHO Paraquat 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 Paraquat and ORTHO X-77 Spreader (non-ionic). Constant agitation recommended at all times. Refer to Atrazine 80 Wettable label for directions, limitations, cautions and for a list of weeds controlled by preemergence activity of Atrazine.

Tank-Mix with Atrazine and GRAM® (This tank-mix should be used instead of PARAQUAT + Atrazine when better preemergence control of barnyardgrass, crabgrass and fall panicum is desired.)

Apply 1 to 2 pts. ORTHO Paraquat CL plus 1 to 2 lbs. Atrazine 80 W and 1.5 to 2.0 lbs. GRAM plus 2 to 2 1/2 lbs. GRAM 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 GRAM on medium soils and the higher rates on heavy soils. Refer to Atrazine and GRAM labels for directions, limitations, cautions and for a list of weeds controlled by preemergence activity of Atrazine and GRAM. The addition of 2.4-D Esterat 1.5 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 60 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 nitro-

gen solutions as a carrier. Add IGRAN to spray tank first, mixing thoroughly in carrier. Then add Atrazine, 2,4-D (if used), Paraquat and ORTHO X-77 Spreader (non-ionic). Constant agitation recommended at all times. IGRAN[®] trademark of CIBA-GEIGY.

SOYBEANS: Preplant or Preemergence Treatment—Apply 1 to 4 pts. of 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 10 pt. rate when spring annual broad-leaf 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[®] 50 WP:

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 or LASSO EC and LOROX 50 WP labels. Refer to the LASSO or LASSO EC and LOROX 50 WP labels for precautionary statements, crop rotation restrictions, rates which are dependant upon soil textures, directions, limitations, and cautions.

Broadcast Treatment—Apply 1 to 2 pts. ORTHO Paraquat 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 weeds are 1 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 Paraquat CL and ORTHO X-77 Spreader (non-ionic). Continue agitation during application.

LASSO[®] trademark of Monsanto Company.

LOROX[®] trademark of DuPont.

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 pt. ORTHO Paraquat 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 and 2 lbs. per sprayed acre as a band treatment over the crop row or as a broadcast treatment after planting—but before emergence of the crop. **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 application, compute amount of Paraquat and LOROX needed per acre by multiplying 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 tank mixture will NOT CONTROL REGROWTH OF PERENNIAL WEEDS.

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 mixture should be used instead of Paraquat + LOROX or Paraquat + SENCOR when preemergence control of foxtails is desired (see label).

Apply 1 to 2 pts. ORTHO Paraquat CL plus 2 to 2 1/2 pts. LASSO 40 WP or 1 to 2 pts. SENCOR 50 WP per acre as a preemergence or contact 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 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 50 WP to the spray

tank first and mix thoroughly. Then add LASSO followed by ORTHO Paraquat 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 Farbenfabriken Bayer GmbH, Leverkusen.

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 to 2 pts. ORTHO Paraquat CL plus 1/2 to 2 lbs. SENCOR 50 WP according to SENCOR label recommendations as a broadcast ground spray prior to, during or after planting but before emergence of the crop. Use the 1 pt. rate of ORTHO Paraquat CL 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 8 fl. oz. 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. In using minimum tillage equipment, it is important to observe the proper planting depth caution stated on the SENCOR label so application is not made directly onto the soybean seed.

SENCOR[®] trademark of the Parent Company of Farbenfabriken Bayer GmbH, Leverkusen.

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 pt. ORTHO Paraquat 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 Paraquat 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 Farbenfabriken Bayer GmbH, Leverkusen.

LEXONE[®] trademark of E. I. du Pont de Nemours & Co., Inc.

POTATOES (Preplant—Preemergence Treatment)—Apply 1 to 2 pts. per acre as a broadcast treatment in 20 to 60 gals. water per acre and apply after ground application of 10 gals. of 2,4-D (if used) and ORTHO X-77 Spreader (non-ionic) at 8 to 16 fl. oz. per 100 gals. of diluted spray. The application should be delayed until the maximum weed-free period has been achieved. Application should be made after top emergence has been reached. As of certain sensitive varieties, weeds and grasses emerging after application will not be controlled. Postemergence treatment should be performed as required to control severe weed and grass emergence.

FOR KILL OF EMERGED VOLUNTEER BARLEY (California Only)—Preplant in Cattle, Potato, Lettuce, Melon, Sunflower, Sugar Beet and Tomato Fields—Apply 1 to 2 pts. ORTHO Paraquat CL in 20 to 60 gals. water per acre immediately before, during or after planting but before crop emergence.

Aerial Application—Apply 5 to 10 gals. spray mix per acre. Add ORTHO X-77 Spreader (non-ionic) at 8 fl. oz. per 100 gals. of diluted spray.

SEEDBED PREPARATION FOR ESTABLISHING GRASSES FOR SEED PRODUCTION To Control Grasses and Broadleaved Weeds—Prior to the seedbed preparation, apply 1 to 2 pts. per acre. When broadleaved weeds and grasses are present, apply the 3 pt. rate. 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.

Apply 1 to 2 pts. ORTHO Paraquat CL plus 1/2 to 2 lbs. SENCOR 50 WP or 1 to 2 pts. LASSO 40 WP per acre as a preemergence or contact 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 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 50 WP to the spray tank first and mix thoroughly. Then add LASSO followed by ORTHO Paraquat CL and ORTHO X-77 Spreader (non-ionic). Constant agitation is recommended at all times. Do not use treated vines for feed or forage.

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 a 1 to 5 gal/s. diluted mix per sprayed acre. Add 8 oz. ORTHO X-77 Turfgrass Insecticide per 100 gals. spray. Apply broadcast or in bands over the area prior to or at time of seeding desired grasses and forage legumes. Apply as a final treatment when reseeded area is fully established, such as in the case with desirable forage 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 to 2 pts. per sprayed acre prior to, or at time of seeding grasses such as Hardtongrass and Palestine 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 to 2 pts. per sprayed acre during the growing season. Use the 2 pts. rate to suppress vigorous and coarse sod species such as Bluegrass. See seeding directions for use in the Southern 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 seeding emergence and growing conditions, a low minimum of one month between treatment and first grazing. Seeding grasses and forage legumes should be at least 6" tall. Sodagrass must be 10" tall and bermudagrass 24" tall at first grazing. Under late fall or winter conditions, it may take 3 to 5 months for seeded grasses and legumes to reach recommended grazing height.

South and Southeast — Bermudagrass or Bahiagrass Sods. Late Summer or Early Fall Application for Sod Suppression when Seeding Winter Annuals: Apply 1 pt. per acre in 20 to 30 gal/s. water by hand or mechanically to sod that does not exceed 3 inches in height. Apply prior to or at time of seeding winter annuals. Add 8 oz. ORTHO X-77 Turfgrass Insecticide per 100 gals. spray. Do not pasture until seedlings are 3 to 6 inches tall.

BERMUDAGRASS PASTURES: For the Suppression of Emerged Annual Broadleaf and Grassy Weeds including Little Barley, Bromies, Buttercup and Carolina Geranium in Dormant Bermudagrass Pastures: Apply 1 pt. per acre in 20 to 30 gal/s. water with ground equipment or 5 pts. water per acre with hand spraying. Apply in February or March in the Pacific and Southwest and in April or May in the Northeast. Add 8 oz. ORTHO X-77 Turfgrass Insecticide per 100 gals. spray. Do not pasture until weeds are 3 to 6 inches tall.

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 Tansy Mustard in Dormant Alfalfa and Clover Except Annual Clover. — Apply to full grown, green, well-established fields in 10 to 20 gal/s. water by ground or 5 to 10 gal/s. water by hand. Apply in late fall or early spring after the alfalfa 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 broadleaved weeds and grasses are succulent and growth is from 1" to 6" tall. Add ORTHO X-77 Spreader Insecticide at 8 to 32 oz. 100 gal/s. spray mix. Do not pasture animals in treated fields before first cutting. Do not graze, cut or harvest within 60 days of application. 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 1 to 3 pts. per acre in 20 to 60 gal/s. water by ground equipment as a broadcast application. Apply by air in 5 to 10 gal/s. spray mix per acre. Use 3 pt. rate for control 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 Insecticide at 8 to 32 oz. 100 gal/s. 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 Tansy Mustard. Apply 1 to 3 pts. ORTHO Paraquat to 1 to 2 pts. PRINCEP 80 W in 20 to 100 gal/s. spray mix per acre ground or 5 to 10 gal/s. spray mix per acre by air. Use the 1 pt. rate for control of weeds and grasses are less than 4" tall. Refer to PRINCEP label for restrictions, limitations and recommended rates for all types of crops. Do not pasture animals in treated fields until first cutting. Do not graze, cut or harvest within 60 days of application. Do not apply more than once per season. PRINCEP is a trademark of IBA-GEIGY.

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

For Control of:	Use Rate Directions — Pints/Acre	
	For Suppression	For Control
St. Johnswort, 4" or taller weeds	1 to 2 pts.	1 to 2 pts.
Volunteer Sm. Grass	1 to 2 pts.	1 to 2 pts.
1 to 1 1/2 ft. or less	1 to 1 pt.	1 to 1 pt.
Field bindweed, 1 to 1 1/2 ft. or less	1 to 1 pt.	1 to 1 pt.
Shepherdspurse	1 to 2 pts.	1 to 2 pts.
Annual Bluegrass	—	1 to 2 pts.
Chickweed	—	1 to 2 pts.
Red Mustard, 3" or taller weeds	—	1 to 2 pts.

Apply to full grown alfalfa seedlings by ground in 5 to 10 gal/s. water by hand or 5 to 10 gal/s. water by air during the winter, early spring. Add ORTHO X-77 Turfgrass Insecticide at 8 to 32 oz. 100 gal/s. spray mix. Do not use the 1 pt. rate unless the alfalfa has at least 3 true leaf leaves. The 1 pt. rate unless the alfalfa has minimum 4 leaves or rates over 1 pt. unless there are no true leaf 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 60 days of application. Do not apply more than once during the first growing season. **CAUTION:** Do not apply to alfalfa seedlings in California.

ALFALFA, CLOVER AND BERMUDAGRASS: For the Suppression and Control of Broadleaf Weeds and Grasses in New Alfalfa Seedings Grown for Hay (California Only):

HARVEST-AID USES

COTTON HARVEST AID

TO AID IN OPENING OF MATURE BOLLS AND TO DESICCATE GREEN LEAVES: Apply 1 to 2 pts. per acre in 20 to 30 gal/s. water by ground or 5 to 10 gal/s. water by air. Apply in late fall or early spring after the cotton is mature but before the leaves have fallen. Do not graze, cut or harvest within 60 days of application. Do not apply more than once per season.

TO AID IN DEFOLIATION AND OPENING OF MATURE BOLLS OF WESTERN COTTON (ARIZONA, CALIFORNIA): First Application — Apply 1 to 2 pts. per acre in 20 to 30 gal/s. water by ground or 5 to 10 gal/s. water by air. Apply in late fall or early spring after the cotton is mature but before the leaves have fallen. Do not graze, cut or harvest within 60 days of application. Do not apply more than once per season.

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 defoliants per acre.

Second Application—To aid in Opening of Mature Bolls at Second or Later Harvest Aid Treatment and to Desiccate Green Leaves— $\frac{1}{2}$ to 1 pt. Paraquat per acre on desert cotton areas or on rank vigorous cotton, use the 1 pt. rate only or $\frac{1}{2}$ to 1 pt. Paraquat plus $\frac{1}{2}$ to 2 pts. phosphate defoliant or $\frac{1}{2}$ 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 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.

AERIAL APPLICATION—Apply 3 to 10 gals. spray mix per acre. Use ORTHO X-77 Spreader (non-ionic) at 1 pt. 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 1 pt. 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 pts. 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 qt. in 20 to 30 gals. of water per acre. Add ORTHO X-77 Spreader (non-ionic) at 1 to 2 pts. 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 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 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 Paraquat for desiccating potato vines when the potatoes are to be stored or used for seed as this use may result in tuber rot, decomposition and failure of seed pieces to germinate and grow normally.

SOYBEAN HARVEST AID—Apply $\frac{1}{2}$ to 1 pt. per acre on Broadleaf Weeds and Grasses. Use high rate on Cocklebur. Add 1 pt. ORTHO X-77 Spreader (non-ionic) per 100 gals. spray. **Aerial Application**—2 to 5 gals. spray per acre. **Ground Application**—20 to 30 gals. spray per acre. **Indeterminate Varieties:** Apply when at least 65% of the seed pods have reached a mature brown color or when seed moisture is 30% or less. **Determinate Varieties:** Apply when soybean plants are mature, seed pods are fully developed, at least $\frac{1}{2}$ of leaves have dropped, and leaves left on plants are turning yellow. Immature soybean plants are injured. Mature cocklebur, especially drought stressed plants, are injured. Paraquat and desiccation with the phosphate defoliant, 2,4-D, will injure soybean plants. Paraquat and desiccation with the chlorate defoliant will injure soybean plants. Do not graze treated areas or feed treated forage to livestock.

SUNFLOWER (OILSEED VARIETIES ONLY)—For Desiccation of Sunflower Plants and Broadleaf Weeds and Grasses to Facilitate Harvesting. Apply 1 to 2 pts. ORTHO Paraquat CL per acre in 5 gals. spray mix, or 1 to 2 to 4 gals. by ground application equipment. Use the higher rate when weed 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 pt. per 100 gals. water. Do not graze treated areas or feed treated forage to livestock.

SUGARCANE—Preharvest Crop Desiccation (Florida and Texas Only)—Apply $\frac{1}{2}$ to 1 pt. per acre. Apply to mature plant or stubble cane in 4 to 10 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 a nozzle sprayer

3 to 14 days before burning and harvest. For rapid results, apply when weather is clear and warm. Apply as a coarse spray at low pressure when air is calm to prevent spray drift.

DIRECTED SPRAYS

ORCHARDS, VINEYARDS, WINDBREAK, SHADE AND ORNAMENTAL TREES. For kill of annual broadleaf weeds and grasses and for top kill and suppression of perennials and green suckers under Filbert trees, in the interspaces and around the base of trees and vines—Almonds, Apples, Apricots, Avocados, Bananas, Cherries, Citrus, Coffee, Figs, Filberts, Grapes, Macadamia Nuts, Nectarines, Olives, Papayas, Peaches, Pears, Pecans, Plums, Prunes, Walnuts and other Trees such as Arborvitae, Ash, Elm, Fir, Oak and Pine—Apply as a directed spray at 1 to 2 gals. per sprayed acre in 30 to 100 gals. water (use 30 to 50 gals. water for pecans) to thoroughly cover the weeds and grasses. Add ORTHO X-77 Spreader (non-ionic) at 8 to 32 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, green suckers, 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.

ALMONDS, GRAPES AND WALNUTS (California Only); ORANGES (California and Florida Only); SOUR CHERRIES (Michigan Only); APPLES, PEACHES, PEARS: Tank-Mix With PRINCEP® 80 W Simazine 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 to 2 qts. ORTHO Paraquat CL per acre and PRINCEP 80 W at the following rates per acre:

Crop	Rate PRINCEP 80 W Per Sprayed Acre	Precautions
Almonds, Apples, Apricots, Avocados, Bananas, Cherries, Citrus, Coffee, Figs, Filberts, Grapes, Macadamia Nuts, Nectarines, Olives, Papayas, Peaches, Pears, Pecans, Plums, Prunes, Walnuts and other Trees such as Arborvitae, Ash, Elm, Fir, Oak and Pine	1 to 2 gals. in 30 to 100 gals. water (use 30 to 50 gals. water for pecans) to thoroughly cover the weeds and grasses. Add ORTHO X-77 Spreader (non-ionic) at 8 to 32 oz. per 100 gals.	Do not spray when wind speed is more than 10 mph. Do not spray when temperature is below 60°F. Do not spray when relative humidity is below 60%. Do not spray when wind direction is from the treated area. Do not spray when wind speed is more than 10 mph. Do not spray when temperature is below 60°F. Do not spray when relative humidity is below 60%. Do not spray when wind direction is from the treated area.
Almonds, Grapes and Walnuts (California Only); Oranges (California and Florida Only); Sour Cherries (Michigan Only); Apples, Peaches, Pears	1 to 2 qts. ORTHO Paraquat CL per acre and PRINCEP 80 W at the following rates per acre:	Do not spray when wind speed is more than 10 mph. Do not spray when temperature is below 60°F. Do not spray when relative humidity is below 60%. Do not spray when wind direction is from the treated area.

For broadcast application apply 1 to 2 qts. ORTHO Paraquat CL per acre and PRINCEP 80 W at the following rates per acre: 1 to 2 gals. in 30 to 100 gals. water (use 30 to 50 gals. water for pecans) to thoroughly cover the weeds and grasses. Add ORTHO X-77 Spreader (non-ionic) at 8 to 32 oz. per 100 gals.

For broadcast application apply 1 to 2 qts. ORTHO Paraquat CL per acre and PRINCEP 80 W at the following rates per acre: 1 to 2 gals. in 30 to 100 gals. water (use 30 to 50 gals. water for pecans) to thoroughly cover the weeds and grasses. Add ORTHO X-77 Spreader (non-ionic) at 8 to 32 oz. per 100 gals.

For broadcast application apply 1 to 2 qts. ORTHO Paraquat CL per acre and PRINCEP 80 W at the following rates per acre: 1 to 2 gals. in 30 to 100 gals. water (use 30 to 50 gals. water for pecans) to thoroughly cover the weeds and grasses. Add ORTHO X-77 Spreader (non-ionic) at 8 to 32 oz. per 100 gals.

Refer to the PRINCEP 80 W Simazine label for general information, caution and warning statements
PRINCEP® trademark of CIBA-GEIGY for simazine herbicide

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 1 qt. in 20 to 100 gals. water per acre to thoroughly cover weeds and grasses. Add ORTHO X-77 Spreader (non-ionic) at 8 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 1 qt. in 20 to 100 gals. water per acre. Add ORTHO X-77 Spreader (non-ionic) at 8 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 hop yards. Hop vine refuse and silage may be fed to livestock.

GUAVA. — Apply as 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. 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.

PASSION FRUIT. — 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. 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 harvest season, add Paraquat only after picking fruits on the ground. Do not allow animals to graze on treated areas.

PINEAPPLES: For Kill of Annual Broadleaf Weeds and Grasses and Top Kill and Suppression of Perennials. — 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. 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.

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 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 these canes or shoots can result. Apply as a coarse spray to avoid drift injury from the spray mist.

GRAIN SORGHUM: Postemergence Directed Spray. — **For Kill of Emerged Crabgrass and Pigweed 3 Inches or Less in Height.** — 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.

For best results, apply ORTHO Paraquat CL at 1 qt. per sprayed acre in 50 to 100 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.

For best results, apply ORTHO Paraquat CL at 1 qt. per sprayed acre in 50 to 100 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.

For best results, apply ORTHO Paraquat CL at 1 qt. per sprayed acre in 50 to 100 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.

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 precision of application and wind velocity. Do not spray under windy conditions.

FIELD CORN: Postemergence Directed Spray using ORTHO Paraquat CL Alone or ORTHO Paraquat CL + Atrazine Tank-Mix. — **For Control of Emerged Annual Broadleaf Weeds and Annual Grasses less than 4 inches tall.** — Apply 1 pt. ORTHO Paraquat 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 minimum 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. **For Improved Control of Weeds, Especially Broadleaves, Tank-Mix Paraquat and AATREX.** — Add 2 1/2 to 3 1/2 lb. AATREX 80W or 1 to 2 pts. AATREX 4L in combination with 1 pt. ORTHO Paraquat CL per acre. Add AATREX 80W or AATREX 4L to spray tank first, mixing thoroughly in water. Then add Paraquat and surfactant. Constant agitation recommended at all times. Refer to AATREX labels for limitation and cautions. Do not graze treated areas or feed treated forage to livestock. AATREX® trademark of CIBA-GEIGY.

CORN: For use in the USDA Witchweed eradication program. — Kill grassy weeds. Apply 1 qt. ORTHO Paraquat CL in 10 to 20 gals. spray mix 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 rows. In late sprays in early July and repeat in early August if regrowth of grassy weeds occurs. Do not graze livestock in treated area. VISTIC® Registered Trademark of Hercules, Inc.

SOYBEANS: Postemergence Directed Spray. — **For control of seedling Johnsongrass, Crabgrass, Goosegrass, Brachiaria, Echinochloa spp. (Texas Millet) and pigweed less than 2 inches tall.** Apply ORTHO Paraquat CL at 4 fl. oz. (6.3 lb. active) per acre. Use proportionately less for band treatment — for example on 40 inch rows and 16 inch band apply 1 gal. ORTHO Paraquat CL to 40 acres.

For 2 to 4 inch grass and 2 to 3 inch pigweed apply ORTHO Paraquat CL at 3 fl. oz. (4.75 lb. active) per acre — for example on 40 inch rows and 16 inch band apply 1 gal. ORTHO Paraquat 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 ft. fan nozzles per row, 2 nozzles on each side of row. The two inner nozzles should not overlap and should be directed forward and downward. The outer nozzles should be directed 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 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 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.

Florida Only. — Apply 1 qt. in 100 to 200 gals. of water per acre. For top kill of perennials, apply when weeds are 1 to 6 inches tall. For control of annual weeds, apply when weeds are 1 to 6 inches tall. Do not apply within 20 days of harvest.

Hawaii Only. — Apply 1 qt. in 100 to 200 gals. of water per acre. Do not apply within 20 days of harvest.

Louisiana Only. — Apply 1 qt. in 100 to 200 gals. of water per acre. For top kill of perennials, apply when weeds are 1 to 6 inches tall. For control of annual weeds, apply when weeds are 1 to 6 inches tall. Do not apply within 20 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 Plastic Mulch Covered Rows after Crop Plant Emergence or Establishment — Apply as directed spray using 1 qt. 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 leafburn may result. Do not apply more than 3 applications per crop season. Do not allow animals to graze on treated areas.

DORMANT USE

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 to 2 qts. 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 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, Shepherdspurse, Thistle, Wild Mustard, Wild Radish, Wild Oats, Blue Grass, Cheat Grass, Crabgrass) and Top Kill and Suppression of Perennial Weeds (such as Bermudagrass, Johnsongrass, and Morningglory) — 1 qt. 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. 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 subject to periods of extreme drought stress as the desiccating effect of paraquat on pines is accentuated during such periods. Select trees with a minimum of 10 inches dbh. (diameter at breast height) and a minimum of 10 feet in height. Do not treat trees with a history of previous paraquat treatment.

Application Directions — Apply 4 to 8 fl. oz. of paraquat solution per tree. Apply solution to the trunk of the tree, starting at the base and working upward to the top of the tree. Apply solution to the trunk of the tree, starting at the base and working upward to the top of the tree. Apply solution to the trunk of the tree, starting at the base and working upward to the top of the tree.

Bark Streaks or Cuts — This type of wound made by bark beetles or other insects can be treated with paraquat. Apply paraquat solution to the bark of the tree, starting at the base and working upward to the top of the tree. Apply paraquat solution to the bark of the tree, starting at the base and working upward to the top of the tree. Apply paraquat solution to the bark of the tree, starting at the base and working upward to the top of the tree.

The amount of spray required per cut depends on tree circumference and the length of cut or streak (1" 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.

Tree Injection — 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.

Bore Holes — 3/4 to 1 inch in diameter holes 2 to 6 inches deep, depending on tree diameter, are bored slightly downward and tangentially inward rather than directly towards the center of the tree. Solutions of 0.3% 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 90 or 200 mg paraquat per tree. Bore hole applications in the range of 45 to 100 mg paraquat per tree have resulted in effective desiccation 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 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.

Effect on Stem Growth

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

Dilution Table for ORTHO Paraquat CL (2 lbs. cation per gallon)

Concentration of Cation Desired (Wt./Wt. Basis)	To 1 Gal. of ORTHO Paraquat CL, add the following No. Gals. of Water:
0.2%	158
0.5%	458
1.0%	229
2.0%	109
3.0%	69
4.0%	49
5.0%	37

WORKER SAFETY RULES

Avoid accidents. Follow these pesticide Safety rules when handling this product.

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

CONCENTRATE MIXING

SPRAY APPLICATION

WASHING

STORAGE

DISPOSAL

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

ORTHO Paraquat CL 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. ORTHO Paraquat CL 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.

WASH and destroy containers when empty—Never reuse.

DO NOT CONTAMINATE water when cleaning equipment or disposing of wastes.

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.

CONDITIONS OF SALE: 1. Chevron Chemical Company (Chevron) warrants that this material conforms to the chemical description on the label and is reasonably fit for use as directed hereon. Chevron 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. Certain and unforeseeable factors beyond Chevron'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 Chevron under 1 above, resulting from handling, storage and use of this material.

Chevron Chemical Company

1000 Ag Center Drive
San Francisco, CA 94104-1144 Richmond, CA 94804-0026
R.F. 1000-22 P.O. Box 1000-22 EPA Reg. No. 739-2186-AA

ORTHO PARAQUAT CL
EPA Reg. No. 239-2186

COPY A



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 the Chevron Poison Information Center (415) 233-3737 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

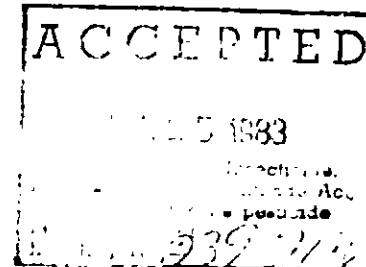
IMMEDIATELY wash with soap and water. Remove and wash all contaminated clothing with soap and hot water before reuse. Prolonged contact will cause severe irritation. Contact with irritated skin or a cut, or repeated contact with intact skin may result in poisoning.

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.



COPY B

**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.**

COPY C

**READ DANGER STATEMENTS AND WORKER
SAFETY RULES ON SIDE PANELS**

COPY D

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.



COPY E

Refer to Supplemental Pamphlet for Use Directions.

WORKER SAFETY RULES

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

COPY F

*The effect of swallowing Paraquat is far more severe than
but which usually results from skin contact or inhalation of spray mist.*
WJye
1/20/83

IMPORTANT: The hazard from swallowing Paraquat far outweighs the hazard 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.

COPY G

CONTENTS



IF SWALLOWED

PROMPT TREATMENT IS ESSENTIAL Symptoms of injury may be delayed

SKIN CONTAMINATION

In case of contact, wash immediately with water. Remove clothing and wash skin where necessary. Prolonged contact will cause severe irritation. Repeated contact may increase danger of absorption.

EYE CONTAMINATION

In case of contact, wash thoroughly with water and get medical attention

INHALATION

Do not breathe spray mist

Exposure to spray mist may cause irritation and nose bleeds Stop and check spray procedure

Note to Physicians: Emergency Information—call (415) 233 3737

[illegible]

POISON DO NOT REMOVE EXCEPT
FOR IMMEDIATE USE.
ONE SWALLOW CAN KILL!

RE
For retail sale
or persons
those uses
cation.



A Weed and Grass Killer · Ha
NEVER PUT INTO FOOD, DRI



Active ingredient

Paracetamol + 1,1'-dimethyl-4,4'-bipyridinium

Inert ingredients

Costa Rica: Paraguis latón per garten

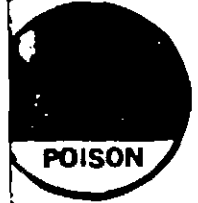
READ FIRST AID AND SAFETY
NET CONTENTS 1 GALL

POISON DO NOT REMOVE EXCEPT
FOR IMMEDIATE USE.
ONE SWALLOW CAN KILL!

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 certifi-
cation.

ORTHO PARAQUAT CL

A Weed and Grass Killer - Harvest Aid Chemical
NEVER PUT INTO FOOD, DRINK OR OTHER CONTAINERS



DANGER CAN KILL IF SWALLOWED
KEEP OUT OF REACH OF CHILDREN
DO NOT USE OR STORE IN OR AROUND THE HOME

Active ingredient	By Wt:
Paraquat dichloride (1,1'-dimethyl-4,4'-bipyridinium dichloride)	29.1%
Inert ingredients	70.9%
Contains 2 lbs. Paraquat cation per gallon	

READ FIRST AID AND SAFETY RULES ON SIDE PANELS
NET CONTENTS 1 GALLON

DIRECTIONS FOR USE
It is a violation of Federal law to use this product in a manner inconsistent
with its labeling.
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
Avoid accidents. Follow these pesticide Safety rules when han-
dling this product.
WASH SPLASHES from skin and eyes immediately
REMOVE and wash contaminated clothing
WASH before eating, smoking and drinking

CONCENTRATE/MIXING
Wear full face shield, rubber gloves and apron when handling con-
centrate

SPRAY APPLICATION
Avoid working in spray mist. If there is risk of exposure wear gog-
gles and approved face mask capable of filtering spray droplets.
Wear waterproof footwear and clothing when spraying or when con-
tacting vegetation wet with spray

Manufactured for
Chevron Chemical Company
Ortho Agricultural Chemicals Division
San Francisco CA 94120-7144 Richmond CA 94804-0036
Form 8525-Q Product 1000-22
EPA Reg. No. 239-2186-AA EPA Est. 239-MD-1

ENVIRONMENTAL SAFETY
WILDLIFE
This product is toxic to wildlife
areas may be killed. Do not apply
DRIFT
ORTHO Paraquat CL is a contact
toxicant. Do not apply under condi-
tions of high wind or other plantings that may
be rendered unfit for sale, use or con-
ditions favor drift from areas.
CHEMICAL HAZARD
This product reacts with alumi-
num. Do not apply under condi-
tions of high humidity or other
conditions favoring corrosion.
This product reacts with alumi-
num. Do not apply under condi-
tions of high humidity or other
conditions favoring corrosion.
This product reacts with alumi-
num. Do not apply under condi-
tions of high humidity or other
conditions favoring corrosion.
EQUIPMENT/CONTAINERS
Flush all spray equipment with
water. Paraquat CL is corrosive to alu-
minum aircraft structures. If
spray drift should be flushed thor-
oughly. WASH and destroy containers.
DO NOT contaminate water with
wastes

STORE AT TEMPERATURES ABOVE 32°F
Do not contaminate feed, food or
Do not store next to feed or food
taining foodstuffs or feeds

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.

PARAQUAT CL

**Grass Killer - Harvest Aid Chemical
TO FOOD, DRINK OR OTHER CONTAINERS**

**KILL IF SWALLOWED
DANGER TO CHILDREN
DANGER TO IN OR AROUND THE HOME**

1,1-dimethyl 4,4'-bipyridinium dichloride
1.00 lb. per gallon

By Wt.
29.1%
70.9%

**INSTRUCTIONS AND SAFETY RULES ON SIDE PANELS
CONTENTS 1 GALLON**

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

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

Avoid accidents. Follow these pesticide Safety rules when handling this product.

WASH SPIASHES from skin and eyes immediately

REMOVE and wash contaminated clothing

WASH before eating, smoking and drinking

CONCENTRATE/MIXING

Wear full face shield, rubber gloves and apron when handling concentrate

SPRAY APPLICATION

Avoid working in spray mist. If there is risk of exposure wear goggles and approved face mask capable of filtering spray droplets. Wear waterproof footwear and clothing when spraying or when contacting vegetation wet with spray.

Manufactured for

Chevron Chemical Company

Ortho Agricultural Chemicals Division
San Francisco CA 94120-7144 Richmond CA 94804 0036
Form 8525-D Product 1000-22
EPA Reg. No. 239-2186-AA EPA Est. 239-MJ-1

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

ORTHO Paraquat CL 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. ORTHO Paraquat CL 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. WASH and destroy containers when empty - Never reuse. DO NOT contaminate water when cleaning equipment or disposing of wastes.

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.