

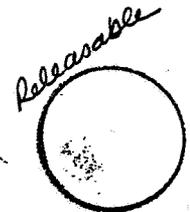
US EPA ARCHIVE DOCUMENT

DATE: September 4, 1979

SUBJECT: EPA File Symbol: 352-GOU LOROX DF  
Caswell #528

FROM: B. T. Backus  
IRB/TSS

TO: Mr. Robert Taylor  
Product Manager 25



Applicant: E.I. duPont de Nemours and Company  
Legal Dept.  
Wilmington, DE 19898

Active Ingredient:  
Linuron [3-(3,4-dichlorophenyl)-1-methoxy-1-methylurea].....50%  
Inert Ingredients:.....50%

Recommendations:

1. While the Oral LD50, Dermal LD50, Eye and Skin Irritation studies are acceptable, there is no Acute Inhalation LC50 study on this formulation, and there is the potential for exposure by this route. The list of data references submitted (received 6-21-79) with this application does not include a reference to an inhalation study.
2. IRB/TSS would have no objection, on the basis of adverse effects to man and the environment, to the conditional registration of this proposed product with the labeling revisions indicated below, provided the applicant uses the "Cite-all" method of support. If the cite-all method of support is not used, an adequate Inhalation LC50 study must be submitted.

Labeling:

1. Normally, required warnings and precautionary statements fall into two groups: those required on the front panel and those which may appear elsewhere (refer to 162.10(h)). However, there is no specific prohibition against combining these two groups on the front panel; therefore we can accept this format.
2. If this combination is to be made, the top line should be "Keep Out of Reach of Children" to emphasize its importance.
3. Immediately beneath this should be the heading PRECAUTIONARY STATEMENTS followed by the subheading: HAZARD TO HUMANS AND DOMESTIC ANIMALS.
4. The appropriate statement following these should be something like: CAUTION! HARMFUL IF SWALLOWED. MAY IRRITATE EYES, NOSE, THROAT, AND SKIN. Avoid breathing dust or spray mist. Avoid contact with eyes, skin or clothing. If in eyes, flush with plenty of water. Get medical attention if irritation persists. (The CAUTION must meet the type size requirements).

13  
35?

5. The proposed ENVIRONMENTAL HAZARDS statement is adequate.

Review:

These studies were conducted at the Haskell Laboratory for Toxicology and Industrial Medicine of the E. I. du Pont de Nemours and Company (Haskell Laboratory Report No. 123-79, MR No. 0581-787). Studies were conducted on the product as proposed for registration; received at EPA 6-21-79, and in Acc. 238656.

1. Oral LD50 Test (rats). Report No. 123-79; March 23, 1979.

Procedure: Material, as an aqueous solution, was administered by intragastric intubation to 8 groups of young ChR-CD rats, with 10M or 10F in each group; dosage levels were (M) 4000, 4600, 5000, 5500 mg/kg; for females: 3500, 3900, 4600 and 5300 mg/kg. Survivors were sacrificed at 14 days, with 2 survivors/group given a gross post-mortem examination.

Results: Among males, 4/10 at 4000; 2/10 at 4600; 5/10 at 5000; and 8/10 at 5500 mg/kg died; for females, 2/10 at 3500; 4/10 at 3900; 9/10 at 4600; and 8/10 at 5300 mg/kg died. Acute Oral LD50 (M) = 4833 mg/kg; (F) = 4060 mg/kg. 95% confidence limits for males: not defined; for females: 3535-4496 mg/kg. Symptomology: eyes half-closed, ataxia, lacrimation, chromodacryorrhea, salivation, weight loss. Gross post-mortem showed possible liver, lung, kidney and stomach effects. No terminal body weight data given; only initial group averages.

Study Classification: Core Minimum Data

Product Classification: Tox. Cat. III:CAUTION

2. Skin Absorption LD50 in Male and Female Rabbits. Report No. 131-79, dated March 30, 1979.

Procedure: 5M, 5F rabbits with abraded skin were exposed for 24 hrs to a dosage level of 2000 mg/kg of test material, with 14-day observation. 2M, 2F were examined for gross pathology after observation period.

Results: No mortalities. No significant observations. Dermal LD50 is greater than 2000 mg/kg.

Study Classification: Core Minimum Data

Product Classification: Tox. Cat. III:CAUTION

3. Eye Irritation in Rabbits; Report No. 2-79.

Procedure: 0.1 ml (47 mg) of test material was applied to one eye of each of 9 rabbits. Three eyes were washed out with tap water for one minute beginning 20 seconds after application; remaining 6 eyes were unwashed. Eyes were examined at 1, 2, 3, 4, and 9 days.

Results: No corneal opacity. 4/6 unwashed eyes had conjunctival irritation; in only one case was any irritation present on 4th day. All unwashed eyes scored zero on day 9; all scores for washed eyes.

Study Classification: Core Minimum Data

Product Classification: Tox. Cat. III:CAUTION

4. Skin Irritation Test on Rabbits; Report No. 138-79.

Procedure: 0.5 gm of test material moistened with saline was applied at each of 4 sites (2 intact, 2 abraded) on each of 6 male rabbits, with 24-hr exposure.

Results: (Additional data received August 21, 1979). Scores of 0-3 for erythema at 24 hrs; 0-2 at 72 hours. All edema scores = 0. Primary Dermal Irritation Index = 0.85.

Study Classification: Core Guideline Data

Product Classification: Tox. Cat. IV:CAUTION

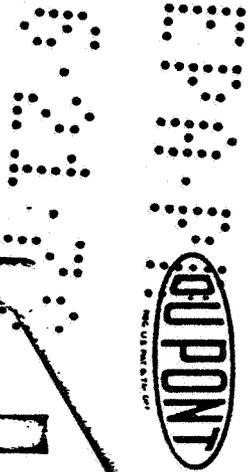
*Byron T Backus 9/04/79*

Byron T. Backus  
IRB/TSS

Addendum to Labeling:

6. Following DIRECTIONS FOR USE add the statement: "It is a violation of Federal law to use this product in a manner inconsistent with its labeling."

◀ Continued from side panel



NET 4185

DRY  
FLOWABLE

# LOWROCK® DF

**ACTIVE INGREDIENT:**

Linuron [3-(3,4-dichlorophenyl)-1-methoxy-1-methylurea] ..... 50%

**INERT INGREDIENTS** ..... 50%

EPA Est.

EPA Reg. No. 352

### HAZARDS TO HUMANS

Keep out of reach of children.

**CAUTION!** HARMFUL IF SWALLOWED.  
MAY IRRITATE EYES, NOSE, THROAT AND SKIN.

Avoid breathing dust or spray mist.  
Avoid contact with skin, eyes, and clothing.

### ENVIRONMENTAL HAZARDS

Keep out of lakes, streams, or ponds. Do not contaminate water by cleaning of equipment or disposal of wastes.

### STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal. Do not re-use container. Bury empty container, or product that cannot be used, in a safe place away from water supplies, or dispose of by alternative procedures recommended by federal, state or local authorities. Open dumping is prohibited.

B-21899 5-79

Made in U.S.A.

Printed in U.S.A.

4 141  
362

**IMPORTANT**

Injury to or loss of desirable trees or other plants may result from failure to observe the following:  
 Do not apply (except as recommended for crop use), or drain or flush equipment on or near desirable trees or other plants, or on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots. Do not use on lawns, walks, driveways, tennis courts, or similar areas. Prevent drift of spray to desirable plants. Do not contaminate any body of water. Keep from contact with fertilizers, insecticides, fungicides and seeds.  
 Thoroughly clean all traces of "Lorox" DF from application equipment immediately after use. Flush tank, pump, hoses, and boom with several changes of water after removing nozzle tips and screens (clean these parts separately).

**NOTICE OF WARRANTY**

Du Pont warrants that this product conforms to the chemical description on the label thereof and is reasonably fit for the purposes stated on such label only when used in accordance with the directions under normal use conditions. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Du Pont. In no case shall Du Pont be liable for consequential, special or indirect damages resulting from the use or handling of this product. All such risks shall be assumed by the buyer. DU PONT MAKES NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.



• DRY FLOWABLE

Directions For Use — See Attached Folder

**GENERAL INFORMATION**

Du Pont "Lorox" DF Weed Killer is a dry flowable granule to be mixed in water and applied as a spray for selective control of weeds in certain crops and for non-selective weed control on non-cropland areas. It is non-corrosive to equipment, non-flammable, and non-volatile. For field corn, sorghum, soybeans and winter wheat, "Lorox" DF is recommended for use in conjunction with certain other herbicides; observe all cautions and limitations on labeling of all products used in mixtures.

**SELECTIVE USE IN CROPS**

Do not use on any crop in Kern County, California.

	<u>Preemergence Use</u>	<u>Postemergence Use</u>
CARROTS	Michigan, Wisconsin	United States
CELERY	East of Rocky Mountains*	United States
CORN (FIELD)	East of Rocky Mountains	United States
CORN (SWEET)	—	East of Rocky Mountains
COTTON	—	—
PARSNIPS	United States	—
POTATOES	East of Rocky Mountains	Mid-south and Southeast
SORGHUM	Southwest and Great Plains	United States
SOYBEANS	United States	Idaho, Oregon, Washington
WHEAT (WINTER)	Idaho, Oregon, Washington	—

\*Post-transplant use only

**NON-CROP WEED CONTROL  
ROADSIDES • FENCE ROWS**



# Product Labeling

DIRECTIONS FOR USE

ACTIVE INGREDIENT: Lincron [3-(3,4-dichlorophenyl)-1-methoxy-1-methylurea] . . . . . 50%  
INERT INGREDIENTS . . . . . 50%

EPA Reg. No. 352

**EQUIPMENT—SPRAY VOLUMES AND PRESSURES:** Use a tractor mounted fixed boom power sprayer properly calibrated to a constant speed and rate of delivery. Openings in screens should be equal to or larger than 50 mesh. Continuous agitation in the spray tank is required to keep the material in suspension. Agitate by mechanical or hydraulic means, if by pass or return line is used, it should terminate at bottom of tank to minimize foaming. Avoid overlapping, and shut off spray booms while starting, turning, slowing or stopping, or injury to the crop may result.

For preemergence application, use 25 to 40 gals. per acre and spray pressure of 30 to 40 psi (for mixtures containing Paraquat CL or "Roundup", use 20 to 60 gals. per acre). For postemergence application, use sufficient volume (min. 25 gals. per acre) for thorough coverage of weed foliage; use spray pressure of 20 to 25 psi to keep spray drift to a minimum.

**Aerial:** "Lorox" DF may be applied by aircraft to carrots, potatoes, and wheat in 5 to 10 gals. of water per acre and to soybeans (preemergence only) in 2 to 10 gals. per acre. Avoid overlapping of spray swath and avoid application under conditions where excessive drift may occur. Where aerial application is made on bedded plantings, apply parallel to rows.

**SPRAY PREPARATION:** Mix proper amount of "Lorox" DF into necessary volume of water in spray tank with agitator running. For tank mixture, dilute "Amiben", "Lasso", 2,4-DB ("Butyrac" 200 or "Butoxone"), or bromoxynil with 2 parts of water and add slowly as last ingredient to spray tank. Where use of Surfactant WK is recommended, dilute with 10 parts of water and add as last ingredient to nearly full tank.

For tank mix combinations with "Paraquat" CL or "Roundup", follow mixing instructions under Minimum or No-Tillage Soybeans.

For preemergence application, nonpressure nitrogen or fertilizer solution may be used in the spray mixture. Small quantities should be tested for compatibility by the following procedures before full scale mixing:

1. Put 1 pint of fertilizer solution in a quart jar.
2. Mix 2 teaspoons "Lorox" DF with 2 tablespoons of water; mix thoroughly and add to fertilizer solution.
3. Close jar and shake well.
4. If other herbicides are to be used in the mixture, premix 2 teaspoons of wettable powders or 1 teaspoon of liquids with 2 tablespoons of water; add to "Lorox" DF/fertilizer mixture.
5. Close jar and shake well.
6. Watch mixture for several seconds; check again in 30 minutes.
7. If mixture does not separate, foam, gel, or become lumpy, it may be used.
8. Mixing ability may be improved by adding compatibility agents such as Kalo Laboratories "Complex" or Witco Chemicals "Sponto" 168D. Follow directions on container.

Provided the above procedures shows the mixture to be compatible, prepare the tank mixture as follows: add the fertilizer solution to the spray tank first. Dilute "Lorox" DF with 2 parts of water, thoroughly mix and add slowly to spray tank with agitator running. For tank mixtures with other herbicides, follow directions above.

**USE RATES:** All rates of "Lorox" DF (and tank mixtures) are expressed as broadcast rates; for band treatment, use proportionately less. For example, use 1/3 of the broadcast rate when treating a 14" bagg where row spacing is 42". Where a range of dosages is given, use the lower rate on coarser soils (low in clay or organic matter) and the higher rate on finer soils (high in clay or organic matter); for postemergence application, use the lower rate on smaller weeds and the higher rate on larger weeds.

**SOIL LIMITATIONS:** Unless otherwise directed, do not use on sand, loamy sand, gravelly soils or exposed subsoils or on soils containing less than 1% organic matter as injury to the treated or subsequent crops may result.

**REPLANTING:** If initial seeding fails to produce a stand, the same crop may be replanted in soil treated preemergence with "Lorox" DF (or with recommended tank mixtures). Thoroughly work the soil before replanting; do not re-treat field with a second application of "Lorox" DF to the crop may result. Unless otherwise directed, do not replant treated areas to any other crop within 4 months after last application as injury to subsequent crops may result. West of Rocky Mountains—carrots or celery may be planted 4 months after last application; unless otherwise directed, do not plant any other crop until 1 year after the last application.

### CARROTS

**Preemergence Application—Michigan and Wisconsin:** Make a single application of 1 to 3 lbs. per acre after planting but before carrots emerge; plant seed at least 1" deep. Use the lower rate on lighter soils (low in clay or organic matter) and the higher rate on heavier soil (high in clay or organic matter). Subsequent postemergence application may be made provided the total does not exceed 4 lbs. "Lorox" DF per acre per season.

**Postemergence Application—U.S.:** Apply 1 1/2 to 3 lbs. per acre as a non-directed spray after carrots are at least 3" tall. Apply before annual grasses exceed 2" in height and before broadleaf weeds exceed 1" in height. Repeat applications may be made if necessary.

**HAZARDS TO HUMANS**  
Keep out of reach of children.

**CAUTION!** HARMFUL IF SWALLOWED.  
MAY IRRITATE EYES, NOSE, THROAT, AND SKIN.  
Avoid breathing dust or spray mist. Avoid contact with skin, eyes, and clothing.

**ENVIRONMENTAL HAZARDS**  
Keep out of lakes, streams, or ponds. Do not contaminate water by cleaning of equipment or disposal of wastes.

**IMPORTANT—**Injury to or loss of desirable trees or other plants may result from failure to observe the following:

Do not apply (except as recommended for crop use), or drain or flush equipment on or near desirable trees or other plants, or on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots. Do not use on home plantings of trees, shrubs or herbaceous plants, nor on lawns, walks, driveways, tennis courts, or similar areas. Prevent drift of spray to desirable plants. Do not contaminate any body of water. Keep from contact with fertilizers, insecticides, fungicides, and seeds.

Thoroughly clean all traces of "Lorox" DF from application equipment immediately after use. Flush tank, pump, hoses, and boom with several changes of water after removing nozzle tips and screens (clean these parts separately).

### GENERAL INFORMATION

Du Pont "Lorox" DF Weed Killer is a dry flowable granule to be mixed in water and applied as a spray for selective control of weeds in certain crops and for non-selective weed control on non-cropland areas. It is non-corrosive to equipment, non-flammable and non-volatile.

"Lorox" DF may be applied to soil prior to emergence of weeds to control susceptible weed seedlings for an extended period of time; the degree of control and duration of effect will vary with the amount of chemical applied, soil texture, rainfall and other conditions. Soils high in clay or organic matter require higher dosages than soil low in clay or organic matter to obtain equivalent herbicide performance. Moisture is required to activate the chemical; best results occur if rainfall (or irrigation) occurs within 2 weeks of application. In the Columbia River Basin, use "Lorox" DF only if crop is sprinkler irrigated.

"Lorox" DF may also be used to control emerged weeds. Results vary with rate applied and environmental conditions; best results are obtained on succulent weeds growing under conditions of high humidity and temperatures of 70° F. or higher. Addition of a surfactant such as Du Pont Surfactant WK to the spray (where recommended) increases contact effects of "Lorox" DF.

"Lorox" DF is recommended for use in conjunction with certain herbicides for treatment of field corn, sorghum, soybeans and winter wheat; observe all cautions and limitations on labeling of all products used in mixtures.

Since the effect of "Lorox" DF varies with soils, uniformity of application, and environmental conditions, it is suggested that growers limit their first use to small areas.

### NOTICE OF WARRANTY

Du Pont warrants that this product conforms to the chemical description on the label thereof and is reasonably fit for purposes

6 147 30

Under normal use conditions, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Du Pont. In no case shall Du Pont be liable for consequential, special or indirect damages resulting from the use of handling of this product. All such risks shall be assumed by the Buyer. DU PONT MAKES NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

## DIRECTIONS FOR USE

"Lorox" DF Weed Killer should be used only in accordance with recommendations on this label, or in separate published Du Pont recommendations available through local dealers. Do not use on any crop in Kern County, California.

## SELECTIVE USE IN CROPS

**PREEMERGENCE USE** (Germinating Weeds): "Lorox" DF, at recommended rates, controls weeds such as:

Broadleaves		Grasses
Florida beggarweed	Mustard	Barnyardgrass (watergrass)
Large-flowered	Nettleleaf goosefoot	Canarygrass
Large-flowered	Pigweed	Crabgrass
Common dayflower	Purslane	Foxtail (including giant)
Florida purslane	Wild radish	Goosegrass
Florida pusley	Common ragweed	Fall panicum
Large-flowered	Smartweed	
Lambsquarters		
<b>Partial Control</b>		
Common morningglory		
Florida pusley (teaweed)		
Large-flowered		
Large-flowered (buttonweed)		

**Note:** Consult "Lasso", "Ramrod", "Roundup", atrazine, propazine, "Orphan", "Surflan", "Amben", and "Ortho" Paraquat CL labels for additional weeds controlled when "Lorox" DF is used in conjunction with these herbicides.

"Lorox" DF will not control established perennials such as bermudagrass, Canada thistle, field bindweed, johnsongrass and purple nutsedge. The lower dosage rates are effective on coarser soils and the higher rates on finer soils and on the more resistant seedling weeds. Sufficient moisture (1/2" to 1" on moist soils; 1" to 2" on dry soils) in the form of rainfall or sprinkler irrigation is necessary after treatment to carry the chemical into the root zone of germinating weeds; best results are obtained when this occurs within two weeks after application. If heavy rainfall occurs soon after application, injury to crop may result.

A good seed bed must be prepared before application of "Lorox" DF as crop injury may result if application is made to ground which is cloddy or compacted resulting in improperly planted seed. Plant seed to depth specified. Surface of the soil should not be cultivated or disturbed after application of "Lorox" DF and before emergence of the crop as weed control may be reduced and crop injury may result. However, if moisture is insufficient to activate the herbicide, a shallow cultivation (rotary hoe preferred) should be made after emergence of row crops while weeds are small enough to be controlled by mechanical means.

**POSTEMERGENCE USE** (Emerging Seedling Weeds): "Lorox" DF, at recommended rates, controls weeds such as:

Broadleaves		Grasses
Florida beggarweed	Annual morningglory	Barnyardgrass (watergrass)
Large-flowered	Nettleleaf goosefoot	Canarygrass
Large-flowered	Pigweed	Crabgrass
Common dayflower	Prickly sida (teaweed)	Foxtail (including giant)
Florida purslane	Purslane	Goosegrass
Florida pusley	Common ragweed	Fall panicum
Large-flowered	Sesbania	Texas panicum
Large-flowered	Sicklepod	Annual ryegrass
Large-flowered	Smartweed	Rattail fescue
Large-flowered	Velvetleaf (buttonweed)	
Lambsquarters		
Mustard		

**Note:** Consult bromoxynil "Butyrac" 200 or "Butoxone" labels for additional weeds controlled when "Lorox" DF is used in conjunction with these herbicides.

Best results are obtained under conditions of high humidity and temperatures over 70°F. Control of emerged weeds under drought stress is usually impractical.

"Lorox" DF per acre). Do not exceed 40 psi spray nozzle pressure as crop injury may result.

"Lorox" DF may be applied following an application of Stoddard solvent provided treatments are at least one day apart. Stoddard solvent may be applied following an application of "Lorox" DF provided treatments are at least 2 weeks apart. Shorter time intervals between applications may result in injury to the crop. Do not apply "Lorox" DF as a tank mixture with Stoddard solvent, surfactants, nitrogen or fertilizer solution, other pesticides, nor when temperature exceeds 85°F as crop injury may result.

**Note:** Because carrot varieties vary in their resistance, determine tolerance to "Lorox" DF prior to adoption as a field practice to prevent possible crop injury; do not treat susceptible varieties which show an initial burning of foliage following postemergence treatment with "Lorox" DF.

## CELERY

**East of Rocky Mountains—Post-transplant Application:** Make a single application of 1 1/2 to 3 lbs. per acre. Apply as a non-directed spray after celery is transplanted and established, but before celery is 8" tall. Apply before annual grasses exceed 2" in height and before broadleaf weeds exceed 6" in height. In the Northeast, use only on celery grown on muck soils.

Do not exceed 40 psi spray nozzle pressure, and do not apply when temperature exceeds 85°F, nor as a tank mixture with surfactants, nitrogen or fertilizer solution, or other pesticides as injury to the crop may result. Do not replant to crops other than celery or carrots within 4 months after application as injury to subsequent crops may result.

## CORN (FIELD)

**East of Rocky Mountains—Preemergence Application:** Select one of the following herbicide treatments for application as a tank mixture. Make a single application after planting but before crop emerges. Plant seed at least 1 1/2" deep on flat or raised seedbeds only or injury to the crop may result. Do not spray over top of emerged corn.

"Lorox" DF + "Lasso" (Tank Mixture)

Soil Texture	Product Per Acre	
	Low Organic Matter (1 to 3%) "Lorox" DF + "Lasso" (Lbs.) (Quarts)	Moderate Organic Matter (3 to 6%) "Lorox" DF + "Lasso" (Lbs.) (Quarts)
Sandy loam	2 1/2 to 1 1/2 + 1 1/2 to 1	1 1/2 to 2 + 1 to 1 1/2
Silt loam	1 to 1 1/2 + 1 to 1 1/2	1 1/2 to 2 1/2 + 1 1/2 to 2
Clay loam	1 1/2 to 2 + 1 1/2 to 2	2 to 3 + 2 to 2 1/2

**Replanting:** Corn or soybeans may be replanted within 4 months; after 4 months, any crop may be planted.

"Lorox" DF + "Ramrod" (Tank Mixture)

Soil Texture	Product Per Acre	
	Low Organic Matter (1 to 3%) "Lorox" DF + "Ramrod" 65 (Lbs.) (Lbs.)	Moderate Organic Matter (3 to 6%) "Lorox" DF + "Ramrod" 65 (Lbs.) (Lbs.)
Sandy loam	2 1/2 to 1 1/2 + 1 to 2	1 1/2 to 2 + 2 to 3
Silt loam	1 to 1 1/2 + 1 1/2 to 2 1/2	1 1/2 to 2 1/2 + 2 1/2 to 4
Clay loam	1 1/2 to 2 + 2 to 3	2 to 3 + 3 to 4 1/2

**Replanting:** Corn may be replanted within 4 months; after 4 months, any crop may be planted.

"Lorox" DF + atrazine (Tank Mixture)

Soil Texture	Product Per Acre	
	Low Organic Matter (1 to 2%) "Lorox" DF + atrazine 80% (Lbs.) (Lbs.)	Moderate Organic Matter (2 to 5%) "Lorox" DF + atrazine 80% (Lbs.) (Lbs.)
Sandy loam	2 1/2 to 1 + 1 1/2 to 1 1/2	1 to 2 + 2 1/2 to 1 1/2
Silt loam	1 to 1 1/2 + 2 1/2 to 1	1 1/2 to 2 1/2 + 1 to 1 1/2
Clay loam	1 1/2 to 1 1/2 + 2 1/2 to 1	1 1/2 to 3 + 1 to 2

**Replanting:** Corn may be replanted within 6 months. After 6 months, any crop may be planted except do not follow treated corn with sugar beets, tobacco, or vegetables in rotation.

## CORN (FIELD AND SWEET)

**Directed Postemergence Application:** make a single application as a directed spray after corn is at least 15" high (measured to the highest leaf surface on free standing plants). Do not spray over top of corn. Apply only when there is sufficient differential between height of corn and weeds so that the directed spray thoroughly covers all weed foliage without contact of upper leaves or whorl of corn by spray or drift, as

CONTINUED ON OTHER SIDE

**Directed Postemergence Application:** Make a single application of "Lorox" DF as a directed spray; add 1 pint Surfactant WK for each 25 gals. spray mixture. If sprayer is equipped with skids, shoes or shields, apply 1 lb. per acre when sorghum is 12" tall (free standing plants) and weeds are up to 2" in height; use 1 to 2 lbs. per acre when sorghum is 15" tall and weeds are 2" to 4" in height. If boom drops are used, apply 1 to 2 lbs. per acre when sorghum is at least 18" tall and weeds are 2" to 4" in height. Apply only when there is sufficient differential between height of sorghum and weeds so that the directed spray thoroughly covers all weed foliage without contact of upper leaves or whorl of sorghum by spray or drift as such contact may cause crop injury. **Note:** Do not graze or feed plants to livestock within 3 months after postemergence application.

## SOYBEANS

**Preemergence Application:** Select one of the following herbicide treatments and make a single application after planting but before crop emerges. "Lorox" DF alone or as a tank mixture with "Lasso", may be applied by aircraft (2 to 10 gals. water per acre). Plant seed at least 1 1/2" deep on flat or raised seedbeds only or injury to the crop may result. Injury to soybeans may result if application is made to fields with standing water or fields too wet to cultivate. Do not spray over top of emerged soybeans.

**"Lorox" DF Alone**—If weeds have emerged, add 1 pint Surfactant WK for each 25 gals. spray mixture.

Soil Texture	Lbs. "Lorox" DF Per Acre	
	Low Organic Matter (1 1/2 to 2%)	Moderate Organic Matter (2 to 5%)
Sandy loam	1 to 1 1/2	1 1/2 to 3
Silt loam	1 1/4 to 2 1/2	2 1/2 to 4
Clay loam	1 1/2 to 2 1/2	2 1/2 to 5 <small>(Over 5% organic matter use 6 lbs.)</small>

**Replanting:** Soybeans or field corn may be replanted within 4 months; after 4 months, any crop may be planted.

**"Lorox" DF Following "Treflan" Preplant**—Where "Treflan" has been used as a preplant incorporated treatment (according to directions on "Treflan" label), apply "Lorox" DF as a separate operation using 1/2 the rate recommended above for "Lorox" DF alone. For rotation crops, follow instructions on "Treflan" label.

**"Lorox" DF + "Amiben" (Tank Mixture)**

Soil Texture	Product Per Acre	
	Low Organic Matter (1 1/2 to 3%) "Lorox" DF + "Amiben" (Lbs.) (Quarts)	Moderate Organic Matter (3 to 6%) "Lorox" DF + "Amiben" (Lbs.) (Quarts)
Sandy loam	1/2 to 1 1/2 + 3	1 1/2 to 2 + 3
Silt loam	1 to 1 1/2 + 3	1 1/2 to 2 1/2 + 4
Clay loam	1 1/4 to 2 + 4	2 to 3 + 5

**Replanting:** Soybeans or field corn may be replanted within 4 months; after 4 months, any crop may be planted.

**"Lorox" DF + "Lasso" (Tank Mixture)**

Soil Texture	Product Per Acre	
	Low Organic Matter (1 1/2 to 3%) "Lorox" DF + "Lasso" (Lbs.) (Quarts)	Moderate Organic Matter (3 to 6%) "Lorox" DF + "Lasso" (Lbs.) (Quarts)
Sandy loam	1/2 to 1 1/4 + 1/2 to 1	1 1/4 to 2 + 1 to 1 1/2
Silt loam	1 to 1 1/2 + 1 to 1 1/2	1 1/2 to 2 1/2 + 1 1/2 to 2
Clay loam	1 1/4 to 2 + 1 1/2 to 2	2 to 3 + 2 to 2 1/2

**Replanting:** Soybeans or field corn may be replanted within 4 months; after 4 months, any crop may be planted.

**"Lorox" DF + "Ramrod"—Seed Crop Only (Tank Mixture)**

Soil Texture	Product Per Acre	
	Low Organic Matter (1 to 3%) "Lorox" DF + "Ramrod" 65 (Lbs.) (Lbs.)	Moderate Organic Matter (3 to 6%) "Lorox" DF + "Ramrod" 65 (Lbs.) (Lbs.)
Sandy loam	1/2 to 1 1/4 + 1 to 2	1 1/2 to 2 + 2 to 3
Silt loam	1 to 1 1/2 + 1 1/2 to 2 1/2	1 1/2 to 2 1/2 + 2 1/2 to 4
Clay loam	1 1/4 to 2 + 2 to 3	2 to 3 + 3 to 4 1/2

when seed is planted during abnormally dry weather, treat after plants have been settled by rainfall or irrigation. Apply as a broadcast spray prior to emergence of wheat or to semi-dormant wheat plants. Application to actively growing plants may result in temporary yellowing (chlorosis) of wheat. Winter sensitive varieties such as McDermid and Hyslop may be less tolerant of "Lorox" DF than winter hardy varieties such as Gaines and Nugaines.

Crop injury may result where severe winter stress, disease or insect damage follows application, and also from failure to observe the following: do not use on sand or loamy sand soils, nor on gravelly or sandy loams low in organic matter (less than 1%), nor on thinly covered or exposed sub-soil areas (clay knobs); do not treat wheat planted less than 1" deep; do not treat wheat where winter climatic conditions have caused "heaving" of plants; do not treat wheat plants lacking in vigor due to poor emergence, insect damage, disease, high alkalinity, or other causes; do not apply after wheat has reached the "boot" stage of maturity nor when maximum daily temperature exceeds 60°F.; do not use "Lorox" DF with surfactants nor nitrogen fertilizer or solution after wheat has emerged.

Do not graze or feed immature plants to livestock. Do not replant treated areas to any rotation crop within 6 months after last application as injury to subsequent crops may result.

**West of Cascade Range:** Make a single application of 2 to 3 1/2 lbs. per acre as soon as possible after planting. If wheat and weeds have emerged, apply before weeds are 3" to 4" tall.

**East of Cascade Range:** Make a single application of "Lorox" DF alone or where recommended below, as a tank mixture with bromoxynil. If fall-planted wheat fails to grow due to winter kill or adverse growing conditions after fall treatment, allow 4 months before planting spring wheat. Do not re-treat field with a second application during the same crop year as injury to the crop may result.

**Where Average Annual Rainfall Exceeds 16 inches:**

**Fall Treatment:** For early fall-planted wheat (seeded before September 10), apply 1 to 1 1/2 lbs. "Lorox" DF per acre either before or after wheat has emerged but before weeds are 2" tall. Treatment after October 1 generally gives best results. Do not apply after soil freezes in the fall. **Spring Treatment:** Apply 1 to 1 1/4 lbs. "Lorox" DF per acre as soon as wheat starts to grow in the spring. Application after weeds have reached a height of 2" may give poor results.

**Where Average Annual Rainfall is 10 to 16 inches:**

**Fall or Winter Treatment:** After wheat is planted in the fall, apply 1 to 1 1/2 lbs. "Lorox" DF per acre when sufficient moisture is available to germinate wheat seed. Apply either before or after wheat has emerged, but before weeds are 2" tall and before the soil freezes. Application later than March 1 may give poor results.

**Where Average Annual Rainfall is 10 to 20 inches:**

**Fall or Spring Treatment:** Apply 1/2 lb. "Lorox" DF plus 1/2 lb. bromoxynil per acre as a tank mixture, either in the fall after wheat has emerged but before soil freezes or in the spring as soon as soil thaws; apply before weeds are 2" tall or across.

## NON-CROP WEED CONTROL

For short-term control of annual weeds on non-cropland areas such as roadsides and fence rows—apply 2 to 6 lbs. "Lorox" DF per acre in 40 to 100 gals. of water. For best results, apply shortly before weed growth begins or at early seedling stage of growth. For control of established annual weeds, add Surfactant WK at rate of 2 qts. per 100 gals. of spray mixture and apply as a thorough coverage spray during periods when daily temperatures exceed 70°F. and before weed growth exceeds 8" in height.

### STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal. Do not re-use container. Bury empty container, or product that cannot be used, in a safe place away from water supplies, or dispose of by alternative procedures recommended by federal, state or local authorities. Open dumping is prohibited.

- \*Registered trademark of Monsanto Company
- †Registered trademark of Elanco Products Company
- †Registered trademark of Amchem Products, Inc.
- \*Trademark of Chevron Chemical Company
- †Registered trademark of Rhône-Poulenc Inc.

**CONTINUED FROM FRONT SIDE**

such contact may cause crop injury. Early cultivation (rotary hoe or other suitable equipment) will aid in achieving proper differential between height of corn and weeds.

Use 1 1/4 to 3 lbs. per acre; add 1 pint Surfactant WK for each 25 gals. spray mixture. For field corn, non-pressure nitrogen solution may be substituted for all or part of the water. Use the lower rate on lighter soils (low in clay or organic matter) and when weeds do not exceed 2" in height; use the higher rate on heavier soils (high in clay or organic matter) for weeds up to 5" in height.

**COTTON**

**East of Rocky Mountains—Directed Postemergence Application:** Apply as a directed spray; adjust nozzles to minimize contact to cotton leaves with spray or drift or crop injury may result. Do not spray over top of cotton.

Apply 1 to 1 1/2 lbs. per acre when cotton is at least 8" tall and emerged weeds do not exceed 2" in height; add 1 pint Surfactant WK for each 25 gals. spray mixture. If needed, a second application at same rate may be made one week or later after initial treatment. Alternatively, after cotton is 20" tall, make a single application of 2 to 3 lbs. per acre following last cultivation; if emerged weeds are present, add Surfactant WK as directed above. **Note:** Do not use on Pima varieties of cotton. Do not graze treated fields or feed forage from treated areas to livestock. Do not feed gin trash to livestock.

**PARSNIPS**

**Preemergence Application:** Make a single application of 1 1/2 to 3 lbs. per acre. Apply after planting but before crop emerges. Plant seed at least 1/2" deep.

**POTATOES**

**Preemergence Application:** make a single application as a broadcast spray after planting but before crop emerges. Plant seed at least 2" deep. Do not spray over top of emerged potatoes. If beds are to be "dragged" and/or "hilled", apply after the final "dragging" or "hilling" operation. Apply before grasses are 2" tall and before broadleaf weeds are 6" tall, preferably just before or when weed seedlings emerge. If emerged weeds are present, add 1 pint Surfactant WK for each 25 gals. spray mixture. In irrigated areas, best results are obtained when application is made to moist soil, followed within 2 weeks by 1" to 2" of sprinkler irrigation (or rainfall). On powder dry soils, irrigate prior to herbicide application and follow with sprinkler irrigation to activate the herbicide.

**East of Rocky Mountains:** Apply 1 1/2 to 2 1/2 lbs. per acre on the coarser soils (sandy loams, silt loams: 1 to 2% organic matter) and 2 1/2 to 4 lbs. per acre on finer soils (silt, clay loams: 2 to 5% organic matter); on soils over 5% organic matter, use 4 lbs. per acre and apply to emerged weeds (before potatoes emerge).

**Wisconsin—Central Sands Area:** Apply 1 lb. per acre on sands and 2 lbs. per acre on loamy sands.

**SORGHUM**

**Preemergence Application:** Select one of the following herbicide treatments for application as a tank mixture. Make a single application after planting but before crop emerges. Plant seed at least 1" deep on flat or raised seedbeds only; crop injury to the crop may result. Do not spray over top of emerged sorghum.

**"Lorox" DF + propazine—Southwest (Tank Mixture)**

Soil Texture	Product Per Acre			
	Low Organic Matter (1 to 2%) "Lorox" DF + propazine 80% (Lbs.)		Moderate Organic Matter (2 to 4%) "Lorox" DF + propazine 80% (Lbs.)	
Sandy loam	1/2 to 1	1/2 to 1	1 to 1 1/2	1/2 to 1
Silt loam, clay loam	1 to 1 1/2	1/2 to 1	1 to 2	1/2 to 1 1/2

**Replanting:** Do not follow treated sorghum with any fall crop, nor with sugar beets, tobacco, vegetables or potatoes in rotation. Prior to replanting, thorough seedbed preparation including fall or spring plowing is recommended.

**"Lorox" DF + "Ramrod"—Great Plains (Tank Mixture)**

Soil Texture	Product Per Acre			
	Low Organic Matter (1 to 3%) "Lorox" DF + "Ramrod" 65 (Lbs.)		Moderate Organic Matter (3 to 6%) "Lorox" DF + "Ramrod" 65 (Lbs.)	
Sandy loam	1/2 to 1 1/2	1 to 2	1 1/2 to 2	2 to 3
Silt loam	1 to 1 1/2	1 1/2 to 2 1/2	1 1/2 to 2 1/2	2 1/2 to 4
Clay loam	1 1/2 to 2	2 to 3	2 to 3	3 to 4 1/2

**Note:** Do not graze or feed sorghum forage or silage from treated fields. Replanting: Sorghum in field area may be replanted...

**Note:** Do not graze or feed forage from treated areas to livestock; do not seed for food, feed, or oil purposes. **Replanting:** Soybeans, sorghum or field corn may be replanted within 4 months; after 4 months, any crop may be planted.

**"Lorox" DF + "Surflan" 75W (Tank Mixture)**

Soil Texture 1/2 to 3% Organic Matter	Product Per Acre	
	"Lorox" DF (Lbs.)	"Surflan" 75W (Lbs.)
Coarse	1 to 1 1/2	1/2 to 1
Medium	2	1 to 1 1/2
Fine	2 1/2	1 1/2 to 1 3/4

**Note:** Do not use treated vines for feed or forage. **Replanting:** Soybeans may be replanted within 4 months; after 4 months, any crop may be planted except do not plant root crops within 12 months.

**SOYBEANS—Minimum or No-Tillage:** "Lorox" DF may be used with "Ortho" Paraquat CL or "Roundup" in tank mix combinations for preemergence and postemergence control of many broadleaf weeds and grasses and for top kill or suppression of some perennials where soybeans will be planted directly into a preformed bed (stale seed bed), cover crop, or in previous crop residues such as corn or small grain stubble. Addition of "Lasso" to the tank mixture improves control of grasses and volunteer small grains.

Apply with ground equipment immediately before, during, or after planting but before crop emerges. Use 20 to 60 gals. of water per acre. Use the higher gallonage for dense stubble or vegetation.

**"Lorox" DF + Paraquat CL—**Select the rate from the table for preemergence use of "Lorox" DF alone and thoroughly mix in the spray tank first; then add Paraquat CL as directed under "Paraquat Combinations".

**"Lorox" DF + "Lasso" + Paraquat CL—**Select the rate from the table for preemergence use of "Lorox" DF + "Lasso" tank mixture and thoroughly mix in spray tank first according to directions; then add Paraquat CL as directed under "Paraquat Combinations".

**Paraquat Combinations—**Select and tank mix one of the above treatments; then add 1 to 2 pints Paraquat CL per acre. Use the higher rate for weeds 4" to 6" tall. As the last ingredient, add 1 pint Surfactant WK or "Ortho" X-77 Spreader per 100 gals. of spray mixture. Maintain constant agitation.

**"Lorox" DF + "Lasso" + "Roundup"—**Select the rate from the table for preemergence use of "Lorox" DF + "Lasso" tank mixture and thoroughly mix in spray tank first according to directions. As the last ingredient, add 1 1/2 qts. of "Roundup" per acre for control of emerged annual weeds or 2 to 4 qts. per acre for control of emerged perennial and annual weeds.

**SOYBEANS—Directed Postemergence Application:** Apply "Lorox" DF, alone or as a tank mixture with 2,4-DB, as a directed spray to cover weed foliage with minimum contact of the soybean plant. Do not spray higher than 3" on the soybean stem or crop injury may result. Do not spray over top of soybean plants. For broadcast application, use a single flood-type spray nozzle ("K" series or equivalent) per middle mounted on an oiling shoe or gauge wheel. For band treatment, use two nozzles per row mounted on oiling shoes or gauge wheels, one on each side of row. To avoid spray drift, which may cause crop injury, do not exceed nozzle pressure of 25 psi nor use nozzle tips smaller than 8002 T—Jet (or equivalent) and do not spray under windy conditions. For best results, use a preemergence treatment (such as "Lorox" DF) or cultivation to control early weed growth and to increase the differential between height of soybeans and weeds. **NOTE:** Do not use on soils with less than 1% organic matter. Do not apply within 60 days of harvest. Do not feed soybean forage or hay to livestock from fields treated postemergence. Harvested soybeans may be used for food, feed, or oil purposes.

**"Lorox" DF Alone:** For soybeans at least 8" high and when weeds do not exceed 2" in height, apply 1/2 to 1 lb. per acre. Make a second application at same rate if new flush of weeds occurs.

For soybeans at least 12" high and when weeds do not exceed 4" in height, make a single application of 1 to 2 lbs. per acre. Alternatively, make a split application of 1 lb. per acre followed by a second application at the same rate after 1 week or later.

Add 1 pint Surfactant WK for each 25 gals. spray mixture. Do not apply more than 2 lbs. "Lorox" DF per acre per season for preemergence treatment.

**"Lorox" DF + 2,4-DB (Tank Mixture):** For soybeans at least 8" high and when weeds do not exceed 4" in height, apply 1 lb. "Lorox" DF + 1.5 lb. 2,4-DB (13 fl. oz. "Butyrac" 200 or 1 pt. "Butoac" 200). A second application may be made if needed, but do not exceed more than 2 applications per season.

**WHEAT (WINTER)**

9  
367