pm 25 1812-257 page 1 of 6

MAR 16

MAR 16 1993

Ms. Carol Eakins
Griffin Corporation
P.O. Box 1847
Valdosta, GA 31603-18847

Subject: Direx 4L
EPA Reg. No. 1812-257
RE: Submission of Industrial Use Label for non-crop land use.
Your submission dated December 18, 1992.

Dear Ms. Eakins:

The above mentioned amendment submitted in connection with registration under FIFRA is acceptable. However, please make the following corrections to any future labels:

1. Under the "Environmental Hazards" statement, replace "Do not apply directly to water with, "Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark".

2. Under "General Information" please remove...(except as recommended for crop use).

A stamped copy is enclosed for your records.

Sincerely,

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

	CONCURRENCES							
SYMBOL	H7505C							
SURNAME	HICKS							
DATE	3-16-93							

EPA Form 1320-1 (12-70)

OFFICIAL FILE COPY

Griffin

Direx® 4L

HERBICIDE

Diuron Flowable

INDUSTRIAL USE

For Control of Many Annual and Perennial Grasses and Herbecaeous Weeds

ACTIVE INGREDIENT:	
Diuron (3- [3, 4-dichlorophenyl]-1,1-dimethylurea)*	40.0%
INERT INGREDIENTS:	60.0%
TOTAL	100.0%

*Contains 4.0 lbs. of Diuron per gallon.

KEEP OUT OF REACH OF CHILDREN

CAUTION

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED: Drink 1 or 2 glasses of water. Induce vomiting, by placing finger in back of throat. Call a physician. Never give anything by mouth to an unconscious person.

IF INHALED: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth to mouth. Get medical attention.

IF ON SKIN: Remove by washing.

IF IN EYES: Flush with plenty of water. Get medical attention if irritation persists.

GRIFFIN CORPORATION
VALDOSTA, GEORGIA 31601

EPA REG. NO. 1812-257

Griffin

3 9 6

ACCEPTED
with COMMENTS
In EPA Letter Dated:

MAR 16 1993

BEST AVAILABLE COPY

Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 1812-267

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MADE IN THE U.S.A.

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GRIFFIN CORPORATION
VALDOSTA, GEORGIA 31601

EPA REG. NO. 1812-257

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS & DOMESTIC ANIMALS

CAUTION

Harmful if swallowed, inhaled or absorbed through the skin. Do not get in eyes or on skin. Do not breathe spray mist. Wash thoroughly after handling. If swallowed, induce vomiting. Get medical attention. If inhaled, remove victim to fresh air. If on skin, remove by washing. Get medical attention if irritation persists. If in eyes, flush with plenty of water. Get medical attention. Do not apply this product in such a manner as to directly or through drift expose workers or other persons. The area being treated must be vacated by unprotected persons.

ENVIRONMENTAL HAZARDS

This product is toxic to fish and wildlife. Do not apply directly to water. Do not apply where weather conditions favor drift from areas treated. Do not contaminate water when disposing of equipment washwaters.

DIRECTIONS FOR USE

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

RE-ENTRY STATEMENT

Farm workers performing hand labor operations should not enter treated cropland areas without protective clothing until sprays have dried. Because certain states may require more restrictive re-entry intervals for various crops treated with this product, consult your State Department of Agriculture for further information.

Written or oral warnings must be given to farm workers performing hand operations who are expected to be in a treated cropland area or in an area about to be treated with this product. (Indicate specific oral warnings which inform workers of areas or fields that may not be entered without specific protective clothing, period of time field must be vacated and appropriate actions to take in case of accidental exposure). When oral warnings are given, warnings shall be given in a language customarily understood by workers. Oral warnings must be given if there is reason to believe that written warnings cannot be understood by workers. Written warnings must include the following information: CAUTION. Area treated with Direx 4L on (date of application). Do not enter without appropriate protective clothing until spray has dried. In case of accidental exposure see Statement of Practical Treatment.

STORAGE & DISPOSAL

Do not contaminate water, food or feed by storage or disposal. Keep from contact with fertilizers, insecticides, fungicides and seeds.

PESTICIDE DISPOSAL: Pesticide wastes are acutely hazardous. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

GENERAL INFORMATION

Apply this product only as specified on this label.

Shake or stir well before using.

Local conditions may effect the use of this chemical. Consult State Agricultural Extension Service or Experiment Station weed specialists for specific recommendations for local weed problems.

Direx 4L is to be mixed with water and applied as a spray for control of weeds. Effects are slow to appear and will not become apparent until the chemical has been carried into the root system by moisture.

IMPORTANT: 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 domestic waters. Do not apply this product through any type of irrigation system.

Thoroughly clean all traces of Direx 4L from application equipment *immediately* after use: otherwise crop injury may result when equipment is used again. Flush tank, pump, hose and boom with several changes of water after removing nozzle tips and screens (clean parts separately).

Before spraying, calibrate equipment to determine quantity of water necessary to uniformly cover measured area to be treated. Carefully measure proper amount and add into necessary volume of water. Water serves only as a carrier. Material must be kept in suspension at all times by continuous agitation. Except for small [illegible] use boom power sprayers properly calibrated to insure constant rate of application. Openings in screens should be equal to or larger than 50 mesh. Agitate by [illegible] or hydraulic means in the spray tank. If by-pass or return line is used, it should terminate at bottom of tank to minimize foaming. Do not use air agitation. For [illegible] control in small areas, tank type hand sprayer or sprinkling can may be used; shake or stir frequently.

SELECTIVE USE IN CROPS

WEEDS CONTROLLED: Direx 4L as a preemergence herbicide selectively controls germinating seedling weeds in certain crops. Rates of 1 to 1½ qts. per acre controls annual weeds such as crabgrass, barnyard grass, pigweed, purslane, lambsquarters, and ragweed*. At rates of 1½ quarts per acre seedling weeds such as annual bluegrass (Poa annua), annual sweet vernalgrass*, foxtail, rattail, fescue, red sprangletop*, velvetgrass, chickweed, corn spurry*, dogfennel, [illegible], cocklebur, cornwell, groundsel*, knawel*, shepherdspurse, tansey mustard*, wild lettuce, wild mustard, annual groundcherry and annual morningglory, are [illegible] additional 2½ to 5 quarts per acre will control weeds such as annual lovegrass, annual ryegrass, sandbur, rice grass, orchardgrass*, seedling Johnsongrass, [illegible] annual sowthistle, buttonweed, speedwell*, dayflower, horseweed*, kochia, kyllinger (Kyllinga)*, marigold*, Mexican clover, hawksbeard*, [illegible], [illegible], pokeweed*, rabbit tobacco, ageratum, Spanish needles, and wild radish. Partial control of cocklebur, prickly sida (teaweed), sesbania*, [illegible] annual morningglory usually occurs with ¾ quarts per acre. Partial control of quackgrass* and horsenettle usually occurs with 3 1/8 quarts per acre, partial control of [illegible] bahiagrass, dallisgrass and guineagrass usually occurs with treatments of 1½ to 2 gallons per acre.

* — except California.

Results vary with soil types (the lower rates are effective on lighter soils and higher rates on heavier soils) and environmental conditions. Sufficient moisture in the form of rainfall or irrigation is necessary after treatment to carry the chemical into the root zone of germinating weeds. Any well established weeds should first be eliminated by mechanical or other means. For best results, the soil should be well prepared and as free as possible from trash and clods. Unless otherwise directed, surface of the soil should not be cultivated or disturbed after application of Direx 4L as efficiency may be reduced.

Direx 4L plus surfactant is an effective treatment of emerged seedling weeds for use as directed postemergence spray in certain crops. Rates as low as 6½ fl. ounces Direx 4L per acre plus surfactant to control seedling pigweed. A rate of 13 fl. ounces per acre controls seedling weeds such as crabgrass, goosegrass, barnyard grass (watergrass), crowfoot, pigweed, purslane and annual morningglory. Best results are obtained under conditions of high humidity and temperatures over 70°F.

SOIL LIMITATIONS: Crop injury may result from failure to observe the following: Unless otherwise directed, do not use (1) on any light (sand, loamy sand or gravelly) soils, (2) on alfalfa, apples, barley, citrus, cotton (preplant and lay-by), grapes, olives, pears, plumosus fern, sorghum, sugar cane, walnuts and winter wheat where organic matter is less than 1%, or on blueberries, birdsfoot trefoil, caneberries, gladiolus, gooseberries, macadamia nuts and peppermint where organic matter is less than 2%.

Unless otherwise directed, do not replant treated areas to any crop within 1 year after last application as injury to subsequent crops may result.

CROPS: All rates are expressed as broadcast rates, where band applications are specified use proportionately less.

ALFALFA: Treat only stands established for 1 year or more. Do not apply to seedling alfalfa nor to alfalfa grass mixtures; do not apply to alfalfa under stress from disease, insect damage, shallow root penetration (such as shallow hard pans), alkali spots, nor to flooded fields as crop injury may result. Do not spray on snow-covered or frozen ground.

Idaho, Oregon, Washington: For control of annual weeds use 1.2 to 2.4 qts. per acre; use 3.2 qts. per acre for control of volunteer alfalfa. Apply in fall after alfalfa becomes dormant but no later than mid-December.

California (Dormant and Semi-Dormant Varieties): For control of annual weeds use 1.2 to 2.4 qts. per acre; use 3.2 qts. per acre for control of volunteer alfalfa. Apply in fall or winter after alfalfa becomes dormant or semi-dormant, but before growth begins in the spring. Crop injury may result if application is made to actively growing alfalfa. For best results, apply before weeds have emerged or become established (2" in height or diameter). Control of established weeds is improved by applying Direx 4L with a suitable contact herbicide registered for such use. Sufficient rainfall for soil activation of Direx 4L is unlikely in California after February 1. Treated areas may be replanted to any crop after one year from last application if rate does not exceed 1 qt. per acre.

Arizona, Nevada: Use 1 to 1½ qts. per acre; apply in fall after alfalfa becomes dormant but no later than January.

Eastern Colorado, Kansas: For control of tansymustard, apply ½ qt. per acre shortly after emergence of mustard in the fall or winter; use 1 qt per acre if weeds are 2" to 4" in height. Alternatively, if other annual weeds are present, apply 1 to 1½ qts. per acre in February or March.

Other Areas Where Alfalfa Becomes Winter Dormant: Use 1 to 1½ qts. per acre (1 to 1¼ qts. per acre East of Appalachian Mountains). Apply in March or early April, but before spring growth begins.

chard for at least one year. Apply 3 quarts per acre to area under individual trees or as a band in the tree row. Avoid contact of foliage or fruit (see soil limitations). Apply in the spring (March through May), except in the far west where application may be made in the winter (December thru February) or a post harvest application of 1½ qts. per acre followed by 1½ qts. per acre in spring. Do not treat dwarf varieties.

ASPARAGUS — Do not apply to newly seeded asparagus nor to young plants during the first growing season after setting nor on plants with exposed roots, as severe injury may result. Apply as a band or broadcast treatment. On light sandy soils and other soils low in clay or organic matter, apply ¾ to 1½ quarts per acre. On soils high in clay or organic matter, use 1½ to 3 quarts per acre. Two applications may be used. The first application should be made before weeds become established but no earlier than 4 weeks before spear emergence and no later than the early cutting period (if weeds are controlled into the cutting period by cultural practices, application may be delayed until immediately after the last cultivation) a second application may be made immediately following completion of harvest provided rainfall is expected. When two applications are used in one season, do not exceed 2 quarts per acre per application. In Washington (irrigated crop) apply a single treatment of 3 quarts per acre. If treatment is delayed until late winter or early spring, incorporation of the chemical in the top 1" to 2" of soil may substitute for lack of rain to activate the herbicide.

BANANAS — New plantings to control annual weeds, apply 1 to 2½ quarts per acre after planting but before plants emerge. Do not apply to loose soil directly over the planting material.

Established Plantings — For control of annuals and for top kill or perennials such as bermudagrass, birdseed grass and guineagrass. Apply 2½ to 5 quarts per acre plus surfactant per 25 gallons of spray mixture as a directed spray. Avoid contact of banana plants with spray or drift as injury may result. When tall, dense weed growth is present, remove weed growth before application. If application is made to soil free of weeds, omit surfactant from the spray mixture. Repeat treatment as needed but do not apply more often than 6 week intervals nor more than a total of 9 quarts of Drex 4L per acre (of ground actually sprayed) in a 12 month period.

Note — Sugar cane or pineapple may be planted one year after last application.

BARLEY (Winter) — **Western Oregon and Western Washington.** [illegible] a single treatment of 1-1/8 to 1-1/2 quarts per acre as soon as possible after planting [illegible] before emergence of barley (see Soil Limitations). Do not apply to cloddy or compacted [illegible] where [illegible] exposed or improperly planted. Treated area should not be replanted to [illegible] rotational crops [illegible] year after last application as injury to the subsequent crop may result.

BIRDSFOOT TREFOIL (LOTUS) — **Western Oregon** [illegible] only stands established for at least one year. Do not apply to seedling [illegible] may [illegible] single application of 1½ quarts per acre when trefoil is dormant (October [illegible] to December) (see Soil Limitations). Do not replant treated areas to any crop within [illegible] application as crop injury may result.

BLUEBERRIES, CANEBERRIES and GOOSEBERRIES (except California) — Apply only to fields which have been established for [illegible] year. Do not apply to berries interplanted with fruit trees, do not apply to [illegible] roots are exposed as injury may result. See Soil Limitations. Apply at base of canes [illegible] spray foliage may result in injury.

Western Washington and Western Oregon — Blueberries, Caneberries, and Gooseberries — For control of winter annual weeds, apply 1½ quarts per acre as a band application at base of canes or bushes in October or November. A second treatment at the same rate in late spring controls summer annuals. A single application of 2½ quarts per acre in January or February will control both winter and summer annuals in some areas but the separate fall and spring schedule is preferred.

Indiana, Michigan, Ohio [illegible] — **Blueberries** — Make a band application of 1½ to 3 quarts per acre in late spring before germination and growth of annual weeds. As an alternate, apply 1½ quarts per acre in the fall and repeat at the same rate in the spring.

Indiana, Michigan, and Ohio — Raspberries — Make a single application as a band treatment at a rate of 2½ quarts per acre in the spring before germination and growth of annual weeds.

Massachusetts — Blueberries — For control of summer annuals, make a single application as a band treatment at a rate of 1½ quarts per acre in late spring, but before germination and growth of weeds.

New Jersey — Blueberries — For control of winter annual weeds, apply 1½ quarts per acre as a band treatment in October, November, or December.

CITRUS — Use only under trees established in the grove for at least 1 year. Apply as directed spray avoiding contact of foliage and fruit with spray or drift. Time application as indicated for specific areas except application may be initiated any time of the year where sprinkle or flood irrigation can be timed to activate the herbicide. Established perennial weeds require other special control procedures. Do not apply under citrus trees that have been subjected to freezing within 6 months, do not apply in home plantings of citrus or in areas where roots of other valuable plants or trees may extend as injury may occur. See Soil Limitations.

Arizona (except Yuma area) and California (except Imperial and Coachella Valleys) — Oranges, Lemons and Grapefruit — Make a single application of 2½ to 3 quarts per acre as a broadcast spray after the grove has been laidup in final form (non-tillage program) in late fall or early winter. As an alternative, apply 1½ quarts per acre in October or November and repeat at the same rate in March or April. Subsequent annual applications of 1½ to 2½ quarts will usually give adequate weed control.

Florida — Oranges, Grapefruit, Tangelos and Tangerines — Apply 3 quarts per acre followed by the same rate 4 to 6 months later. As an alternative, make a single application of 3 to 6 quarts per acre. On non-leaving trees, treat when winter banks are pulled down. On bearing citrus, apply any time when seasonal rains are expected.

For control of paragrass, guineagrass, maidencane, primrose willow and seamyrtle in ditches adjacent to citrus groves, use ¾ to quart Drex 4L per 1000 sq. ft., 8 gallons per acre, using sufficient spray volume (at least 4 gallons per 1000 sq. ft.) to provide thorough and uniform coverage of the ditch. Apply in the spring before weed growth starts or after removal of vegetation. Repeat treatment on spot basis to control hard-to-kill species such as guineagrass. In bedded groves, do not treat water furrows between beds as injury to the trees may result.

Texas — Oranges and Grapefruit — Apply a single treatment of 1½ to 2 quarts per acre for annual weeds. Use 3 to 4½ quarts per acre for control of Johnsongrass seedling. Best results accompany application in the spring. Well established weeds should be eliminated by cultivation prior to treatment.

CORN (except California) (Field) Postemergence — Apply 1½ pints per acre in combination with non-pressurized nitrogen solution. If nitrogen solution is not used, apply ¾ quart Drex 4L per acre and 1½ pints surfactant per 40 gallons spray mixture. Apply as single directed postemergence spray when corn is at least 20 inches high and weeds are no taller than 3 inches. DO NOT APPLY OVER TOP OF CORN. Do not replant to any crop within 1 year except cotton, corn, and grain sorghum may be planted the spring following treatment.

CORN — Preemergence — Arkansas, Louisiana, Mississippi and Tennessee — Make a single treatment of 5 to 8 pts. per acre as a broadcast or band treatment using higher dosage on heavier soils (loam, clay loam). Do not use on light (sand, loamy sand or gravelly) soils as injury may result; plant corn at least 1½ inches deep, do not replant treated areas to crops other than corn or cotton within 4 months following band treatment and 8 months following broadcast treatment as crop injury may result.

COTTON — Injury may occur if Drex 4L is used in conjunction with soil-applied organic phosphate pesticides. Do not allow livestock to graze treated cotton.

COTTON — Preplant — Arizona and California Only — Apply ¾ to 2 quarts per acre as a broadcast spray after furrows preplanting irrigation have been formed, apply either just prior to planting or after the preplanting irrigation but before seed beds are dragged off in preparation of planting (see Soil Limitations). Prior to planting, drag-off the top of the seed bed after planting when irrigation

weed control in the follow bottoms may be lost. A lay-by application also may be made but the combined total per season rate must not exceed ¾ quart Drex 4L per acre on sandy loam or 1½ quarts Drex 4L per acre on clay.

COTTON — Preemergence (except Arizona and California) — Make a single application as a broadcast or a band spray after planting but before cotton emerges. Use at the following rates:

BROADCAST TREATMENT

Soil Type*	Spray Mixture Drex 4L in 25 to 40 gal. per acre	Qts. Drex 4L per acre
Loamy sand	1 pt.	0.5
Sandy loam, loam, silt loam and silt	1½ pts.	0.8
Sandy clay loam, clay loam, silty clay loam and clay	1 qt.	1.0
Silty clay and clay	1½ qts.	1.6

*Do not use on sand as crop injury may result. For heavy clay soils (high in organic matter) use other weed killers. Do not treat cotton in deep furrows as crop injury may result.

Band Treatment: Use proportionately less, for example, for 14 inch band on 42 inch row, use ⅓ of broadcast rate. Apply immediately after cotton is planted wherever possible planting and spraying should be combined into one operation. For best results, soil should be well prepared and as free as possible from trash and clods. Shallow incorporation (no deeper than ¼ inch) with a rotary hoe or similar equipment following planting usually improves results particularly during dry weather. A wide press wheel following planting should be used to provide a level seed bed for subsequent early season postemergence treatments.

Treatment usually provides weed control for a period of 3 to 8 weeks. Sufficient moisture (usually 1 to 2 inches) in the form of rainfall or irrigation is necessary after treatment to carry the chemical into root zone of germinating weeds. Best results are obtained when this occurs within 2 weeks after application. If moisture is insufficient to activate Drex 4L or if soil becomes crusted before crop emerges, a shallow rotary hoeing (no deeper than ¼ inch) should be made before weeds become well established.

If initial seeding fails to produce a stand, cotton may be replanted in soil treated with Drex 4L. Wherever possible, avoid disturbing original bed. If necessary to rework soil before replanting, use shallow cultivation such as discing, do not re-list nor move soil into the original drill area, plant seed at least 1 inch deep, do not retreat field with a second preemergence application of Drex 4L during the same crop year as injury to crop may result.

Aerial Application: For cotton (preemergence only) application may be made by aircraft (5 to 10 gals. per acre). Avoid overlapping of spray swath and avoid application under conditions where excessive drift may occur. Make application parallel to rows where land is bedded.

COTTON — Postemergence: Early Season — apply in combination with a surfactant as a directed spray when cotton is at least 6 inches tall and when weeds do not exceed 2 inches in height, a second application may be made if needed. Control of weeds under drought stress or over 2 inches in height is usually impractical.

Apply as a band treatment only, directing spray to cover weed foliage. DO NOT SPRAY OVER TOP OF COTTON. Use pressure of 20 to 25 psi and adjust nozzles to minimize contact of cotton leaves with spray or drift, or crop injury may result.

BAND TREATMENT

Amount per acre of cropland as applied to 14 inch band on 42 inch rows (in 10 to 15 gal. water)*

Weed Problem	Drex 4L	Active Ingredients
Annual Weeds	4.5 oz. (13.5 oz.)	0.14 lb. (0.4 lb.)**
Pigweed	2.25 oz. (6.75 oz.)	0.07 lb. (0.2 lb.)**

*Include surfactant at 1 pint per 25 gallons of spray; dilute with 10 parts water and add to nearly full tank.

**Equivalent broadcast rates in parentheses.

COTTON — Postemergence: Late Season (Lay-by) — Use ¾ to 1¼ quarts Drex 4L (¾ to 1½ quarts in Arizona and California) in 25 to 40 gallons water per acre as a directed spray (see Soil Limitations). Apply when cotton is at least 12 inches high (at least 20 inches for Pima S-2). Keep contact of spray or drift on cotton plants to a minimum. DO NOT SPRAY OVER TOP OF COTTON. For control of germinating weed seedlings, apply immediately after last cultivation, direct spray to cover the soil beneath cotton plants and between rows. Alternatively, for control of emerged annual weeds (4 inches or less in height) at lay-by time, add 1 pint surfactant for each 25 gallons spray, apply as a directed spray to cover weed foliage beneath cotton plants and between rows. NOTE: Treatment of 1 to 1½ pints Drex 4L per acre plus surfactant followed by the same treatment later, if needed, maybe used as an alternate to the preceeding recommendation.

In irrigated cotton, best residual weed control is obtained if the field is irrigated within 3 to 4 days after application, thoroughly wet the surface of the ground over the row to carry the herbicide into the root zone of germinating weeds.

SUBSEQUENT CROPS

Drex 4L herbicide Type of Application	Crops that May Follow Treated Corn
Band pre or postemergence	Any crop 4 months after last application
Band pre plus postemergence or Broadcast preemergence (and preplant) or Broadcast preemergence plus band postemergence	Cotton, soybeans, corn or grain sorghums (not sorgos or forage sorghums nor grass sorghums) the next spring. Do not replant treated areas to any other crop within one year after last application as injury to subsequent crops may result.
Broadcast postemergence (lay-by)	Cotton, corn, grain sorghums (not sorgos or forage sorghums nor grass sorghums) the next spring. Do not replant treated areas to any other crop within one year after last application as injury to subsequent crops may result.

NOTE: During a single crop season do not exceed the following amount of Drex 4L per acre as [illegible] injury to subsequent crops may result. ½ quart on loamy sand, 1 quart on sandy loam, 1½ quarts on clay loam, and 2-1/8 quarts on clay.

GLADIOLUS — East of Rocky Mountains: Apply ¾ to 1½ quarts per acre as preemergence and/or directed postemergence treatments (see Soil Limitations). If used for both, do not exceed ¾ pints of Drex 4L per acre per application, or a total of 1½ quarts per season. On corms planted in spring, apply ¾ quart per acre or postemergence, but not more than one once. Do not use on corms or plantings in Florida; do not spray over top of gladiolus foliage nor spray to drift onto foliage as injury may result.

GRAPES: Apply only to established vineyards (at least 3 years old) as a band treatment in [illegible] rows. Do not apply to vines with trunks less than 1½ inches in diameter as injury may result.

East of the Rocky Mountains: on soils low in clay or organic matter (1 to 2%), use 1½ to 2½ quarts per acre, on soils high in clay or organic matter, use 2½ to 4½ quarts (see Soil Limitations). Apply in the spring just prior to germination and growth of annual weeds.

6 7.6

New York and Pennsylvania — Control of Perennial Grasses: Apply only to established vineyards (at least 4 years old) for spot control of perennial grasses such as quackgrass, ryegrass and orchardgrass as a band treatment to ridged soil (2 to 4 inches high) under trellis at the rate of 6 to 8 quarts per acre. Band width should not exceed 30 inches. Make one application in the spring of the year and do not apply more than 6 to 9 quarts per acre rate more than once every 4 years. Use only on heavy soil types such as loams, silt loams, clay loams. Do not use in areas where grape roots are shallow or exposed, because of high bedrock, poor drainage or erosion, as injury to grapevines may result.

West of Rocky Mountains: Apply in December, January, or February. For initial treatment, make a single application of 2½ to 3 quarts per acre, subsequent annual applications of 1½ quarts will usually give adequate weed control. As an alternative to the above schedule, apply 1½ quarts of Direx 4L per acre in October or November and repeat application at the same rate in March or April.

GRASS SEED CROPS (Perennial): In areas as specified, apply only to established plantings at least 1 year old; see Soil Limitations.

Colorado, Kansas, New Mexico and Oklahoma: On switchgrass, side oats grama and sand bluestem, apply 1½ to 2½ quarts per acre during the dormant period shortly before weed seedlings emerge. Do not apply after crop begins growth in the spring as crop injury may result in fields where ash residues have accumulated from burning straw. Where burning has resulted in ash residues use 2½ quarts per acre. Spread unburned chaff or straw with a harrow or chopper before application.

Western Oregon: On alta fescue, Highland bentgrass, Astoria bentgrass, orchardgrass, Kentucky bluegrass (Merion bluegrass) apply 1½ to 3 qts. per acre between October 1 and November 15. In fields where ash residues have accumulated from burning straw, use 2½ to 3 quarts per acre; spread unburned chaff or straw with a harrow or chopper before application. If perennial velvetgrass (Holcus lanatus) is a problem, use 3 quarts per acre. For best results apply as soon as possible after fall rains start. Established weeds (beyond 2 to 4 leaf stage) should be removed prior to treatment. Well established vigorous stands of spring planted alta fescue, orchardgrass and Kentucky bluegrass may be treated the following fall provided the crop is planted before April 1 and treatment is not applied before October 15: use Direx 4L at 1½ qts. per acre.

Oregon: To increase tolerance to Direx 4L when planting bentgrass, chewing fescue, Kentucky bluegrass, perennial ryegrass, orchardgrass and tall fescue, an activated charcoal approved for agricultural usage may be applied. After planting, but before Direx 4L application for preemergence weed control, spray a 1" band of activated charcoal to the soil surface directly over grass seed rows. Spray nozzles should be placed directly over the seed rows to assure grass seedlings emerging through the protecting charcoal band. Activated charcoal should be applied at a rate of 300 lbs./acre broadcast which is equal to 15 lb. acre when applied as a one inch band on 20 inch rows.

Eastern Washington, Oregon and Idaho: Established Perennial Bluegrass Grown for Seed — Broadcast 13 — 32 fluid ounces of Direx 4L per acre in enough diluent to get even distribution for suppression. Apply in spring before rapid growth begins of the Bluegrass and when the windgrass is still small (1 — 4 leaf). Do not use on coarse (sandy) textured soils.

MACADAMIA NUTS — Hawaii: Use only in orchards which have been established for at least one year. Apply as a directed spray avoiding contact of foliage with spray or drift. Apply 1½ to 4½ quarts per acre immediately after harvest, preferably before weeds emerge. If weeds have emerged, add 1 to 2 pints of surfactant per 50 gallons spray to increase contact activity on weeds. Retreat as needed but do no exceed 7½ quarts per acre per year.

OLIVES: (except California): Use only under trees established in the grove for at least 1 year. Do not apply in areas where roots of other valuable plants or trees may extend as injury may result. Apply 1½ quarts per acre after the grove is laid-up in final form in late October or November (see Soil Limitations). A second application of 1½ quarts should be made in March or April. Remove weed growth prior to treatment. Avoid contact of foliage with spray or drift.

PECANS (except California): Use only under trees established in the grove for at least three years. Apply 1½ quarts — 3 quarts per acre in spring or early summer. Do not use on soils with less than ½% organic matter.

PEPPERMINT — Pacific Northwest: Apply 2½ quarts per acre just after the last cultivation in the spring prior to emergence of peppermint. Do not apply to newly planted (less than 1 year) nor to emerged peppermint as injury may result.

PINEAPPLE — Hawaii and Puerto Rico: Apply 3 to 6 quarts per acre as a broadcast spray immediately after planting but prior to weed emergence. Use 3 quarts per acre after harvesting plant crop (for ratoon crop). For plant crop only, a second and third broadcast or interspace application may be made prior to differentiation at the rate of 1½ quarts per acre at intervals of not less than 2 months. Additional applications to plant crop may be made as needed to intercrop only using 1½ quarts per acre. Do not apply more than 3 broadcast sprays (maximum 9 quarts per acre) prior to differentiation nor more than 12 quarts total per acre per plant crop. Treated areas may be planted to pineapple or sugarcane 1 year after last application.

PLUMOSUS FERN — Florida: Treat only established stands at least 1 year old. Apply 2½ quarts per acre following hand weeding and 3 to 5 days after mowing of fern (see Soil Limitations). Do not cultivate or disturb soil after application as crop injury may result.

SORGHUM (Grain) — Southwestern States (except California): Apply 2.4 to 12 fl. ounces per acre as directed postemergence broadcast or band treatment if the sorghum is 15 inches tall to control weeds 2 to 4 inches in height (see Soil Limitations). DO NOT SPRAY OVER TOP OF SORGHUM. Add 1 pint surfactant per 25 gallons spray. Apply at spray pressures of 20 to 25 psi to minimize drift.

Use lower rate on broadleaved weeds up to 2 inches tall. Use the higher rate on grasses up to 4 inches and broadleaved weeds up to 4 inches tall. When the lower rate is used, a second application may be made if needed, provided that the total herbicide applied in one crop year does not exceed 13 fluid ounces of Direx 4L per acre. Treatment of weeds under drought stress is usually ineffective.

Do not replant treated areas to crops other than cotton or corn within 4 months following band treatment and 8 months following broadcast treatment as crop injury may result.

SUGAR CANE (except California): To prevent possible crop injury on new cane varieties, tolerance to Direx 4L should be determined prior to adoption as a field practice. Do not treat sugar cane growing on thinly covered sub-soils or rocky areas as crop injury may result, see Soil Limitations. Temporary chlorosis of the crop may result from application over emerged cane. To minimize chlorosis, use directed postemergence sprays.

Florida: For high organic soils, apply 1½ to 3 quarts per acre as a broadcast or band spray prior to weed emergence after planting or after harvesting plant crop (for ratoon crop). A second and third application of 1½ quarts per acre may be made as needed by directed spray inter row. Do not apply more than 3 treatments nor more than 4½ quarts total per acre between planting (or ratooning) and harvest.

Hawaii and Puerto Rico: Apply 3 to 6 quarts per acre as a broadcast spray prior to weed emergence after planting or after harvesting plant crop (for ratoon crop). A second and third application of 1½ to 3 quarts per acre may be made as a broadcast spray over emerged cane or by directed spray interrow.

If weeds are emerged, add a surfactant to spray mixture at the rate of 1 to 2 quarts per 100 gallons and apply as a directed spray. DO NOT SPRAY OVER THE TOP OF CANE.

Do not apply more than 3 treatments nor more than 7½ quarts (Puerto Rico) or 9 quarts (Hawaii) total per acre between planting (or ratooning) and harvest. Treated areas may be replanted to sugar cane or pineapple one year after last application.

Louisiana: Use on plant cane seeded on fallowed ground. Make a single application of 2½ to 2 5/8 quarts per acre at either of the following times: Fall treatment (August through October). Treat a 2 foot band over the row after planting of cane, but before weeds or cane emerge. Spring treatment (January through April) — If shaving and off-barring are practiced, treat a 2 foot band over the row before weeds or cane emerge.

WALNUTS (English) — California: Use only in orchards which have been established for at least 1 year. Apply as a directed spray avoiding contact of foliage with spray or drift. As an initial treatment, apply 2½ to 3¾ quarts per acre after the orchard has been laid-up in final form (non-tillage program) in late fall or early winter. Subsequently, annual application of 1½ to 2½ quarts should be used. Alternatively, apply 1½ quarts per acre in October or November and repeat in March or April.

WHEAT (Winter): Seed bed must be well prepared before preemergence application. Crop injury may result if application is made to ground which is cloddy or compacted, resulting in exposed or improperly planted seed. Whenever seed bed preparation and planting are carried out during abnormally dry weather, resulting in a surface layer of dust over planted seeds, application should not be made until the dust is settled by rainfall or irrigation.

Do not use on thinly covered sub-soil areas (clay knolls), as injury may result to the crop, (see Soil Limitations). Treated areas should not be replanted to any other crop within 1 year after last application as injury to the subsequent crop may result.

Do not apply postemergence treatments where winter climate conditions have caused heaving of the wheat plants or after the wheat plants have reached the boot stage as injury to the crop may result.

Kansas, Oklahoma and Texas: Make a single postemergence application at the rate of 1¼ to 1½ quarts per acre. Apply in the spring as soon as wheat (fall-planted) starts to grow and before weeds are 2 inches tall. Application later than May 1 may give poor results.

Washington, Oregon and Idaho — East of Cascade Range: Make a single application at the rate of ¾ to 1¼ quarts per acre.

In areas having an average annual rainfall exceeding 16 inches: Fall treatment — for early fall — planted wheat (seeded before September 10), apply 3 to 6 weeks after planting but before weeds are 3 to 4 inches tall. Treatment after October 1 has generally given best results. Application should not be made after soil freezes in the fall. Wheat planted in late October should not be treated until the following spring. Spring treatment — apply as soon as wheat starts to grow in the spring. Treatment made prior to April 10 will usually give good results, provided weed growth is less than 2 inches tall. Application later than May 1 may give poor results.

In areas having an average annual rainfall from 10 to 16 inches: Fall or Winter treatment — After wheat is planted in the fall, apply when sufficient moisture is available to germinate wheat seed. Make application before weeds are 2 inches tall and before the soil freezes. Application later than March 1 may give poor results.

NOTE: If fall-planted wheat fails to grow due to winter kill or adverse growing conditions under fall treatment with Direx 4L, only fields treated before November may be replanted to spring wheat. Spring wheat should not be planted before April 1 and only after deep discing and plowing to a depth of 4 to 6 inches prior to planting. Do not re-treat field with a second application during the same crop year or injury to the crop may result.

Washington, Oregon and Idaho — West of Cascade Range: Make a single application at the rate of 1 1/8 to 1½ quarts per acre. Apply as soon as possible following planting of wheat and weeds have emerged, apply before weeds are 3 to 4 inches tall.

A tank mix application of Direx 4L at 13 oz. to 16 oz. per acre plus bromoxynil at 0.25 lb. per acre may be made to wheat in either the spring or fall. Weeds should be no more than 2 inches tall. Fall application should follow wheat emergence, but occur before soil freezes; spring application should be made after soil thaws. Follow all precautions on bromoxynil and Direx 4L labels.

NON-CROP WEED CONTROL: Direx 4L is an effective general herbicide for the control of many annual and perennial grasses and herbaceous weeds on non-cropland areas where bare ground is desired. The degree of control and duration of effect will vary with amount of chemical applied, soil type, rainfall and other conditions. May be used at any time for non-cropland weed control, except when ground is frozen, provided adequate moisture is supplied by rainfall or artificial means. Best results are obtained if applied shortly before weed growth begins. If dense growth is present, remove tops and spray the ground.

To control most weeds for an extended period of time on non-cropland such as: utility, highway, pipeline and railroad rights-of-way, petroleum tank farms, lumberyards, storage areas, industrial plant sites and around farm buildings — Apply 1 to 4 gallons per acre to control most annual weeds. Use 4 to 8 gallons per acre to control both annual and perennial weeds. Repeat treatment may be required where a longer period of control is desired or when hard-to-kill, deep-rooted perennial weeds such as Johnsongrass are present.

For irrigation and drainage ditches, apply 1½ pints per 1,000 sq. ft. (8 gallons per acre). For irrigation ditches, apply during the non-crop season, and when ditch is not in use. To minimize movement of Direx 4L with irrigation water and avoid crop injury, it is essential that it be fixed in the treated soil by moisture. Apply before expected seasonal rainfall, if possible when soil in the ditch is still moist. If rainfall has not totaled at least 4 inches following treatment and before intended use of irrigation ditch, fill with water and allow to stand for 72 hours; drain off and waste remaining water before using ditch. Do not treat any ditch area into which roots of trees or other desirable plants may extend.

For small areas, apply ½ pint per 270 sq. ft. (approximately 10 gallons per acre).

NOTICE OF WARRANTY

GRIFFIN warrants that this product conforms to the chemical description on the label thereof and is reasonably fit for purposes stated on such label only when used accordance with directions, 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 GRIFFIN. In no case shall GRIFFIN 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. GRIFFIN MAKES NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

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