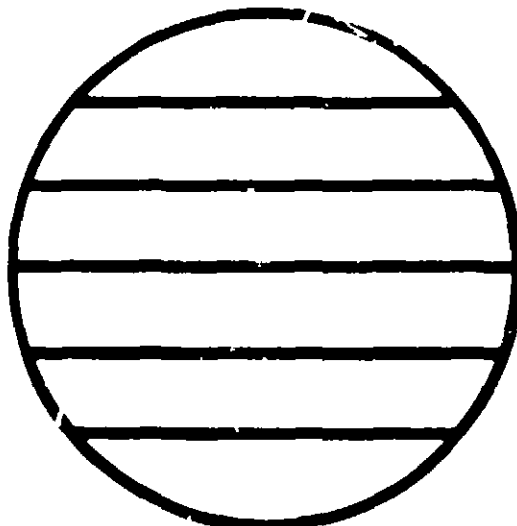


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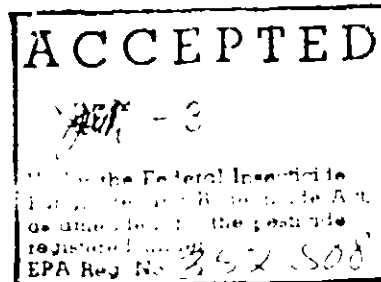


Karmex® DF

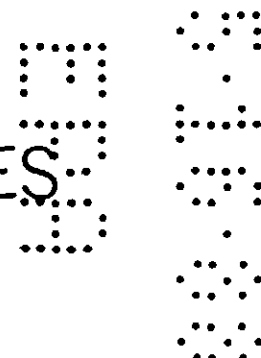
HERBICIDE



TRADE MARK



DISPERSIBLE GRANULES





Karmex® DF HERBICIDE

ACTIVE INGREDIENT: Diuron [3-(3,4-dichlorophenyl)-1,1-dimethylurea] 80%
INERT INGREDIENTS 20%

EPA Reg. No. 352-508

Keep out of reach of children PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

WARNING! CAUSES EYE IRRITATION. MAY IRRITATE NOSE, THROAT AND SKIN.

Avoid breathing spray mist. Avoid contact with skin, eyes and clothing. Wash thoroughly with soap and water after handling.

STATEMENT OF PRACTICAL TREATMENT

If on skin: Wash with plenty of soap and water; get medical attention if irritation persists.

If in eyes: Flush with plenty of water; get medical attention if irritation persists.

FOR MEDICAL EMERGENCIES INVOLVING THIS PRODUCT CALL TOLL FREE 1-800-441-3637.

ENVIRONMENTAL HAZARDS

Do not apply directly to water. Do not contaminate water by cleaning of equipment or disposal of wastes. Cover or incorporate spills.

STORAGE AND DISPOSAL

STORAGE: Store product in original container only, away from other pesticides, fertilizer, food or feed

DISPOSAL: Do not contaminate water, food or feed by storage or disposal. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility

Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke

NOTICE OF WARRANTY

Du Pont 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 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

IMPORTANT Injury to man, livestock and certain other plants may result from failure to observe the following:

Do not apply (except as recommended for use) or draw or flush equipment on or near desirable trees or other plants, or in areas where their roots may extend to 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, water, driveway, tennis courts, or similar areas. Prevent drift of dry powder or spray to desirable plants. Do not allow to enter any body of water. Keep from contact with fertilizers, insecticides, fungicides and seeds. Do not apply the product through any type of irrigation system.

Thoroughly clean all traces of Karmex DF from applicator immediately after use. Flush tank, pump, hose and lines with several changes of water, then remove nozzle tips, if the need is, clean these parts separately.

GENERAL INFORMATION

Karmex DF (Karmex) is a selective herbicide, a variable grassicide, formulated in water and applied as a spray for selective control of weeds in certain crops and for control of weed control in certain areas. It is non-toxic to equipment, nonflammable and nonvolatile.

Karmex 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 rates than those with low clay or organic matter to obtain equivalent herbicide performance. Moisture is required to activate the chemical; best results are obtained when a pre-emergence rainfall occurs within 2 weeks of application.

Karmex DF applied to soil prior to emergence of weeds is an effective procedure because susceptible weeds are controlled early, before a seedling stage where they compete with the crop. With favorable moisture conditions, Karmex DF continues to control weeds for some time as the crop becomes better established. Some weed seedlings begin to break through the pre-emergence treatment in grass and numbers; secondary weed control procedures should be implemented. These include cultivation and post-emergence herbicide application.

Karmex DF may also be used to control emerged weeds. Results vary with rate applied and other environmental conditions; best results are obtained on soils of low clay content with good rainfall. For further information, consult the label for specific instructions. A list of other manufacturers' herbicides which are compatible with Karmex DF is available from the manufacturer.

Karmex DF may be used as a pre-emergence application. Contact of crop foliage and fruit with spray or mist must be avoided in the following crops: home garden fruit trees, grapes, citrus, sugarcane, and established plantings of apples, bananas, plantains, guavas, mangoes, pineapples, guavas, grapes, citrus, sugarcane, papayas, peaches, pears, pecans, walnuts and certain tree plantings.

Under specified conditions (free of weeds and grasses), Karmex DF without surfactant may be applied over the top of alfalfa (established, dormant or dormant), asparagus (established, dormant), alfalfa (established, dormant), grass seed crops (established), oats, red clover (established, dormant), sorghum, wheat, pineapple and pineapples (established, mowed).

Weed species vary in susceptibility to Karmex DF and they may be more difficult to control when under stress. Combinations of Karmex DF with other herbicides (as registered) increase the number of weed species controlled; consult labels of the companion product for this and other information. Results with Karmex DF vary with soils, uniformity of application, and environmental conditions; it is suggested that growers limit their first use to small areas. Observe all cautions and limitations on labeling of all products used in mixtures.

DIRECTIONS FOR USE

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

Do not use Karmex DF herbicide in the control of weeds under conditions with recommended rates on the label or in any other manner which is variable through a dealer.

Do not use Karmex DF herbicide in the control of weeds under conditions with recommended rates on the label or in any other manner which is variable through a dealer.

Do not apply this product in a manner as to directly or through drift expose workers or other persons. The area being treated must be vacated by workers and other persons.

Karmex DF herbicide is a restricted use pesticide. It is not to be used on crops or in areas where it is not registered for use. For further information, consult the label for specific instructions and for other information.

Do not use Karmex DF herbicide in the control of weeds under conditions with recommended rates on the label or in any other manner which is variable through a dealer. Do not use Karmex DF herbicide in the control of weeds under conditions with recommended rates on the label or in any other manner which is variable through a dealer. Do not use Karmex DF herbicide in the control of weeds under conditions with recommended rates on the label or in any other manner which is variable through a dealer.

Do not use Karmex DF herbicide in the control of weeds under conditions with recommended rates on the label or in any other manner which is variable through a dealer.

SELECTIVE USE IN CROPS

PREEMERGENCE USE (Germinating Weeds) Karmex DF at recommended rates controls annual weeds in the following crops:

Broadleaves			Grasses		
4 to 1 Lb. Acre	1 1/2 to 2 Lbs. Acre	2 to 6 Lbs. Acre	4 to 1 Lb. Acre	1 1/2 to 2 Lbs. Acre	2 to 6 Lbs. Acre
Lambquarters	Annual	Ageratum	Barnyardgrass	Annual	Annual
Pigweed	groundcherry	Annual	Watergrass	Bluegrass	Bluegrass
Purslane	Annual	Smartweed	Citrus	Annual wheat	Annual wheat
Pigweed	morningglory	Annual		vernalgrass	Kyllinga
	Chickweed	Summit		Flax	Groundcherry
	Corn spurry	Corn speedwell		Panicum	Peppergrass
	Engelmann	Dayflower		Red sprangletop	Ricegrass
	Field pennycress	Flourish		Annual grass	Sanit
	(A. trichocarpa)	Paintbrush			Seedling grass
	Gromwell	Hawthorn			
	Ground	Hawthorn			
	Pink grass	Marigold			
	Groundcherry	Marigold			
	Groundcherry	Marigold			
	Wild buckwheat	Pineappleweed			
	A. trichocarpa	Pineappleweed			
	Wild mustard	Rabbit tobacco			
		Spanish needle			
		Velvetleaf			
		(bushy weed)			
		Wild radish			

Refer to control of the following weeds in the following crops at rates stated:

Broadleaves		Grasses	
4 to 1 Lb. Acre	4 to 1 Lb. Acre	4 to 1 Lb. Acre	4 to 1 Lb. Acre
morningglory	morningglory	morningglory	morningglory
velvetleaf	velvetleaf	velvetleaf	velvetleaf
Pineappleweed	Pineappleweed	Pineappleweed	Pineappleweed
Purslane	Purslane	Purslane	Purslane
Pigweed	Pigweed	Pigweed	Pigweed

POSTEMERGENCE USE (Emergent Seedling Weeds)

"Karmex" DF at recommended rates, controls annual weeds such as annual morningglory, barnyardgrass (watergrass), crabgrass, crowfoot, goosegrass, pigweed and purslane. Addition of Surfactant WK to the spray (where recommended) increases contact effects of "Karmex" DF. Best results are obtained on succulent weeds growing under conditions of high humidity and temperatures of 70°F or higher.

EQUIPMENT—SPRAY VOLUMES AND PRESSURES

Use a 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 when 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 postemergence application, use sufficient volume (minimum 10 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: For alfalfa, asparagus, barley (winter), cotton (preplant or preemergence only), grass seed crops, pineapple, sugarcane and wheat (winter), 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. Where land is bedded, make application parallel to rows.

SPRAY PREPARATION

Mix proper amount of "Karmex" DF into necessary volume of water, where use of Du Pont Surfactant WK is recommended, add rate with 10 parts of water and add as last ingredient to nearly full tank.

USE RATES:

All usages of "Karmex" DF are expressed as broadcast rates, for band treatment, use proportionately less. For example, use 1/3 of the broadcast rate when treating a 14" band where row spacing is 42". Where a range of dosages is given, use the lower rate on coarse textured soils (low in clay or organic matter) and the higher rate on the fine textured soils (high in clay or organic matter), for preemergence application, use the lower rate on smaller weeds and the higher rate on larger weeds.

SOIL LIMITATIONS:

Crop injury may result from failure to observe the following:

Unless otherwise directed, do not use on sand, loamy sand, gravelly soils or exposed subsoils, nor on pecans where organic matter is less than 1%, nor on alfalfa, apples, artichoke, barley (winter), bermudagrass pasture, citrus, cotton, grapes, oats, olives, papayas, peaches, pears, plumorous fern, sorghum, sugarcane, walnuts and wheat (winter) where organic matter is less than 1%, nor on blueberries, birdfoot trefoil, canterburies, gooseberries, macadamia nuts and peppermint where organic matter is less than 2%.

Preemergence weed control will be reduced on high organic matter soils (greater than 5%, such as peat or muck).

REPLANTING

Unless otherwise directed, do not replant treated areas to any crop within 2 years after last application as injury to subsequent crops may result.

• FIELD CROPS

(See Soil Limitations)

Any field seeded must be prepared before preemergence use of "Karmex" DF as crop injury may result if application is made to ground which is not fully prepared, resulting in improperly planted seed. Plant seed to depth specified. Unless otherwise directed, surface of the soil should not be cultivated or disturbed after application of "Karmex" 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 crops while weeds are small enough to be controlled by mechanical means.

• ALFALFA

Treat only stands established for 1 year or more. Do not apply to seedling alfalfa nor to alfalfagrass mixtures; do not apply to alfalfa under stress from disease, insect damage, shallow root penetration (such as on 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: Use 1 1/2 to 3 lbs per acre, for control of volunteer alfalfa, use 4 lbs per acre. Apply in fall after alfalfa becomes dormant but no later than mid December.

California (Dormant and Semi-Dormant Varieties): Use 1 1/2 to 3 lbs per acre, for control of volunteer alfalfa, use 4 lbs per acre. 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 "Karmex" DF with a suitable contact herbicide registered for such use. Sufficient rainfall for soil activation of "Karmex" DF 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 2 lbs per acre.

Arizona, Nevada: Use 1 1/2 to 3 lbs per acre, apply in fall after alfalfa becomes dormant but no later than January.

Eastern Colorado, Kansas: For control of tansymustard, apply 1 lb per acre shortly after emergence of mustard in the fall or winter, use 2 lbs per acre if weeds are 2" to 4" in height. Alternatively, if other annual weeds are present, apply 2 to 3 lbs per acre in February or March.

Other Areas Where Alfalfa Becomes Winter Dormant: Use 1 1/2 to 3 lbs per acre (1 1/2 to 2 lbs per acre East of Appalachian Mountains). Apply in March or early April, but before spring growth begins.

• ARTICHOKE—California

Apply 2 to 4 lbs per acre in late fall or early winter after the last cultivation. Apply before weeds germinate or to emerging seedlings. Direct spray to cover the area between the rows and at the base of artichoke plants, keeping contact with crop plants at a minimum.

• ASPARAGUS

Apply as a band or broadcast treatment. Do not apply to young plants during the first growing season (except as noted below), nor to newly seeded asparagus, nor on plants with exposed roots as severe injury may result. Preemergence weed control will be reduced on high organic matter soils (greater than 5%).

Established Plantings: On light sandy soils and other soils low in clay or organic matter, apply 1 to 2 lbs per acre. On soils high in clay or organic matter, use 2 to 4 lbs per acre. Two applications may be used; the first application should be made before weeds become established but no earlier than 4 weeks before preemergence and no later than the early cutting period if weeds are controlled by other cutting 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 3 lbs per acre per application. In Washington (irrigated or not), 3 to 4 lbs per acre treatment of 4 lbs per acre. If treatment is delayed until late winter or early spring, no application of the herbicide in the top 1" to 2" of soil may substitute for lack of rain to activate the herbicide.

Newly Planted Crops—California (San Joaquin Delta): Make a single application of 2 to 4 lbs per acre on soils high in clay or organic matter, use the lower rate on clay loams and the higher rate on peat soils. Do not use on soils containing less than 2% organic matter. Soil must be settled by rainfall or irrigation prior to treatment. Do not treat crops planted to a depth of less than 2".

(Continued on next page)

- **BARLEY, WINTER (Drill Planted)**—Western Oregon and Western Washington
Make a single application of 1½ to 2 lbs per acre as soon as possible after planting but before emergence of barley. Do not replant treated areas to any crop within 1 year after last application as injury to subsequent crops may result.
- **BERMUDAGRASS PASTURES (Newly Sprigged)**
Apply 1 to 2 lbs after planting and before emergence of bermudagrass or weeds. Alternatively, for control of emerged annual weeds up to 4" in height, apply 1 to 1½ lb per acre add 1 pt surfactant WK per 25 gal of spray. If bermudagrass has emerged at time of treatment, temporary burn of exposed plant parts may result.
Plant sprigs (1 to 2") deep in a well prepared seedbed. Do not treat areas where sprigs are planted less than 2" deep as crop injury may result. Do not graze or feed to age from treated areas to livestock within 70 days after application.
- **BIRDFOOT TREFOIL (Lotus)**—Western Oregon
Treat only after established for at least 1 year, do not apply to seedling trefoil as injury may result. Make a single application of 2 lbs per acre when trefoil is 1 to 1½ ft tall (from October 15 to December 15). Do not replant treated areas to any crop within 1 year after last application as injury to subsequent crops may result.
- **CORN (FIELD)**
Postemergence—Make a single application of ½ lb per acre in combination with an appropriate nitrogen solution. If nitrogen solution is not used, apply 1 lb per acre add 1 pt surfactant WK per 25 gal of spray. Apply as a directed spray when corn is at least 20" high and weeds are no taller than 3". DO NOT APPLY before June 1 or after Oct 1. Do not replant to any crop within 1 year, except that cotton, corn and grain sorghum may be planted the spring following treatment.
Preemergence—Arkansas, Louisiana, Mississippi and Tennessee. Make a single application of 2 to 3 to 1 lb per acre as a broadcast or for band treatment after planting but before cotton emerges. Plant no deeper than 1½" deep. Do not treat corn fields for more than 1 year following treatment. Following treatment, do not allow livestock to graze treated areas for 30 days.
- **COTTON**
During a single growing season do not exceed the following amounts of "Karmex" DF per acre as injury to subsequent crops may result: 1 lb on loamy sand, 1½ lbs on sandy loam, 2 lbs on clay loam, 2½ lbs on clay. Injury may result if "Karmex" DF is used in conjunction with soil applied organic phosphate pesticides. Do not allow livestock to graze treated cotton.
- Preplant**—Arizona and California. Use "Karmex" DF alone, or apply as a separate operation following preplant broadcast treatment with "Treflan" (incorporated according to directions on "Treflan" label). Apply "Karmex" DF as a band spray after beds are formed, pre-irrigated, and final seedbeds prepared. Prior to planting, drag off the tops of the beds and plant in moist soil not treated with "Karmex" DF. Treated soil is returned to the bed after planting when irrigation furrows are reformed after cotton has emerged. If more than two furrowing out operations are made prior to lay by, or deep furrows are made early, weed control may be reduced in furrow bottoms. Use at the following rates:
"Karmex" DF Alone 1 to 2½ lbs per acre
"Karmex" DF Following "Treflan"

Soil Texture	Product Per Acre—Preplant	
	"Treflan"	"Karmex" DF
Sandy loam, loam, silt loam, silt	1 pt	½ to 1 lb
Sandy clay loam, clay loam, silty clay loam, sandy clay, clay	1½ pt	1 to 1½ lbs

Note: Banding "Karmex" DF, whether applied alone or in combination with "Treflan", increases the probability of injury to cotton from soil applied "Treflan" followed by "Karmex" DF. These treatments should be applied in combination with "Treflan" and fungicide seed treatment to suppress soilborne and seedborne cotton root rot pathogens such as *Fusarium* spp. and *Phytophthora* spp.

"Karmex" DF is a registered trademark of FMC Corporation.

Preemergence—U.S. except Arizona, California, and areas west of Interstate 35 or 35W in Texas and Oklahoma. Use "Karmex" DF alone or apply as a separate operation following preplant treatment with "Treflan". Apply "Karmex" DF after planting but before cotton emerges. Do not treat cotton in deep furrows as crop injury may result. Use only where cotton is planted on flat or rolled level lands. For a low rate application (no deeper than ½") with a rotary hoe or similar equipment following planting usually improves results, especially during dry weather. A wide press wheel should be used on the planter to provide a firm seedbed for subsequent early season postemergence treatment. If moisture is insufficient to activate "Karmex" DF or if soil becomes crusted before cotton emerges, a shallow rotary tining no deeper than ½" should be made before weeds become established.

"Karmex" DF Alone Make a single application as a broadcast or band spray. Use at the following broadcast rates for band treatment, use proportionately less.

Soil Texture**	Lbs "Karmex" DF Per Acre
Loamy sand, sandy loam, loam, silt loam, silt	1½
Sandy loam, loam, silt loam, silt	1
Sandy clay loam, clay loam, silty clay loam, sandy clay	1½
Silty clay, clay	2

**Do not use on soils with less than 1% organic matter as crop injury may result.

"Karmex" DF Following "Treflan" Preplant. Apply "Treflan" prior to planting as a broadcast or band treatment, incorporate according to directions on "Treflan" label. As a separate operation, apply "Karmex" DF as a band treatment 14 to 20" wide after planting but before cotton emerges. Use at the following broadcast rates, for band treatment, use proportionately less. See Note under Preplant above.

Soil Texture**	Product Per Acre	
	Preplant "Treflan"	Preemergence "Karmex" DF
Loamy sand	1 pt	1½ lb
Sandy loam, loam, silt loam, silt	1 pt	1 lb
Sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay, clay	1½ pt	1 to 2 lbs

**Do not use on soils with less than 1% organic matter as crop injury may result.

Postemergence—U.S. Apply only as a directed spray to cover weed foliage. Adjust nozzles to minimize contact of cotton leaves with spray or drift or crop injury may result. DO NOT SPRAY OVER TOP OF COTTON.

Early Season—Apply when cotton is at least 6" tall and when weeds are actively growing and do not exceed 2" in height. Apply as a band treatment at 1½ to 2½ gal of spray, add 1 pt surfactant WK. Two applications may be made if needed.

Weed Problem (Up to 2" Tall)	Lbs "Karmex" DF Per Acre (Broadcast Basis)
Annual grasses	1½
Perennial	2

For control of seedling perennial grasses such as johnsongrass and partial control of late season weeds when weeds are under drought stress or as high as 4" add 1 to 1½ lbs of sodium methylarseinate (DMA) 60% and 20% of paraquat herbicide to the spray mixture. If DMA is used, do not apply after first frost.

- Replanting:** If initial seeding fails to produce a stand, cotton may be replanted in soil treated preplant or preemergence with 1Karmex. If Karmex is applied alone or in conjunction with a herbicide, wherever pests have caused disturbing crop loss and there is injury to the roots, before replanting use shallow cultivation. Such a strategy does not treat the nematode but returns to the original drill area. Plant free fall or 1Karmex and retreat if needed with a second preplant or preemergence application during the same or next year at injury to the crop may result.

"Karmex" DF—Type of Application	Crops That May Follow Treated Cotton
Preemergence or postemergence	Any crop 4 months after last application
Band preemergence plus postemergence —or— Broadcast preemergence (and preplant) —or— Broadcast preemergence plus band postemergence	Cotton, soybeans, corn or grain sorghums (not sorgho 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 or later	Cotton, corn, grain sorghums (not sorgho 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.

Louisiana Use of plant and seedbed on fair, wet ground. Make a single application of 1 to 3 lb. per acre at any of the following times: Fall Treatment (August) through October. Treat a 2 ft. band over the row after plowing or after the 1st of February when the crop emerges. Spring Treatment (January through April) if the ground is not too dry. Treat a 2 ft. band over the row before weeds are 10 in. or more high.

• **WHEAT, WINTER (Dry Planted)**

Crop injury may result where severe winter stress, disease or insect damage follows application, winter-sensitive varieties such as McDermid and Hyslop may be less tolerant of "Karmex" DF than winter-hardy varieties such as Gaines and Huganies. Crop injury may also result 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 subsoil areas; (clay knots); 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. Do not replant treated areas to any other crop within 1 year after last treatment (except as noted) as injury to subsequent crops may result.

Idaho, Oregon and Washington—East of Cascade Range

Areas Where Average Annual Rainfall Exceeds 16 Inches: Make a single application of 1 to 1½ lbs per acre. Fall Treatment: For early fall-planted wheat (seeded before September 16), apply 3 to 6 weeks after planting but before weeds are 4" 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 4" tall. Application later than May 1 may give poor results.

Alternatively, make a single application of ½ to 1 lb "Karmex" DF plus ½ 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.

Areas Where Average Annual Rainfall is 10 to 16 Inches: After wheat is planted in the fall, make a single application of 1 to 1½ lbs per acre when sufficient moisture is available to germinate wheat seed. Apply before soil freezes and before weeds are 2" tall. 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 after fall treatment, only fields treated before November 1 may be replanted to spring wheat. Spring wheat should not be planted before April 1 and only after deep disking and plowing to a depth of 4" to 6" prior to planting. Do not retreat field with a second application during the same crop year as injury to the crop may result.

Oregon and Washington—West of Cascade Range: Make a single application of 1 to 1½ lbs per acre as soon as possible after planting if wheat and weeds have emerged; apply before weeds are 3" to 4" tall. Alternatively, apply a tank mixture of "Karmex" DF plus bromoxynil as detailed above for East of Cascade Range.

Other Areas: Make a single application in the spring as soon as wheat (fall-planted) starts to grow and before weeds are 2" tall. Application later than May 1 may give poor results.

Central Plains and Midwest: Use 1 to 2 lbs per acre.

Kansas, Oklahoma and Texas: Do not use on sand or sandy loam soils. Use 1 lb per acre on silt and silt loam soils and 1½ to 2 lbs per acre on clay, clay loam, and silty clay loam soils.

Northeast: Use 1 to 1½ lbs per acre.

• **FRUIT AND NUT CROPS**

(See Soil Limitations)

Unless otherwise directed, make a single application per year as a directed spray, avoiding contact of foliage and fruit with spray or drift. Do not graze livestock in treated orchards or groves.

APPLES:

Use "Karmex" DF alone, or apply as a tank mixture with Du Pont "Sinbar" Herbicide.

"Karmex" DF Alone:—Use only under trees established in the orchard for at least 1 year; do not treat varieties grafted on full dwarf root stocks. Apply 4 lbs per acre in the spring (March through May). In the Far West, treatment may be made in winter (December through February), or apply 2 lbs per acre as a postharvest treatment followed by 2 lbs in the spring.

"Karmex" DF + "Sinbar":—Use only under trees established in the orchard for at least 2 years. Apply either in the spring or after harvest in the fall before weeds emerge or during early seedling stage of weed growth.

Soil Texture	Lbs Product Per Acre	
	1 to 2% Organic Matter "Karmex" DF + "Sinbar"	More Than 2% Organic Matter "Karmex" DF + "Sinbar"
Sandy loam	1 +... 1	1½ +... 1½
Loam, silt loam, silt	1½ +... 1½	2 +... 2
Clay loam, clay	2 +... 2	2 +... 2

Where crop is grown under furrow irrigation or under raised, berm flood irrigation (trees 4" to 6" above waterline), apply only as a band treatment. Do not treat trees planted in the bottom of irrigation furrows; nor trees grown under flat flood or basin irrigation, as injury to trees may result. Where complete weed control to harvest is desired, additional weed control measures may be required during the growing season.

Georgia:—Apply 2 to 3 lbs per acre in the spring. Repeat application in the fall but do not use more than 4 lbs per acre per year. Add Du Pont Surfactant WK at 1 pint per 25 gals spray mixture to improve control of small, emerged weeds.

• **BANANAS AND PLANTAINS—New Plantings**

To control annual weeds, apply 1½ to 3 lbs per acre after planting but before weeds emerge. Do not apply to loose soil directly over the planting material.

Established Plantings: For control of annuals and for top kill of perennials such as bermudagrass, birdseed grass and guineagrass, apply 3 to 6 lbs per acre plus 1 pt Surfactant WK (or suitable equivalent) per 25 gals of spray; avoid contact of 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 the surfactant from the spray. Repeat treatment as needed, but do not apply more often than 6 week intervals nor more than a total of 12 lbs per acre (broadcast basis) in a 12-month period.

Note: Do not replant treated areas to any crop within 2 years after last application as injury to subsequent crops may result. Except that sugarcane or pineapple may be planted only after last application.

• **BLUEBERRIES, CANEBERRIES AND GOOSEBERRIES**

Use only in fields which have been established for at least 1 year. Do not apply to berries interplanted with fruit trees; do not apply to plants whose roots are exposed as injury may result. Apply as a band treatment at a base of canes or bushes. For spring application, apply before germination and growth of annual weeds.

Georgia—Blueberries

Apply 1½ to 2½ lbs per acre in the spring and repeat treatment after harvest in the fall. Add Du Pont Surfactant WK at 1 pint per 25 gals spray mixture to improve control of small, emerged weeds.

Indiana, Michigan and Ohio—Blueberries: Apply 2 to 4 lbs per acre in late spring; alternatively, apply 2 lbs per acre in the fall and repeat at same rate in the spring. Raspberries: Apply 3 lbs per acre in the spring.

Massachusetts—Blueberries: Apply 2 lbs per acre in late spring.

New Jersey—Blueberries: For control of winter annuals, apply 2 lbs per acre in October, November or December, or a single application of 2½ lbs per acre may be applied in early to mid spring.

California—Raspberries, Blackberries, Boysenberries, Dewberries and Loganberries: For control of winter annuals, apply 2 lbs per acre in October or November; repeat at same rate in late spring to control summer annuals. A single application of 3 lbs 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.

Western Oregon and Western Washington—Blueberries, Caneberries and Gooseberries: Use same schedule as recommended for California.

Continued

CITRUS:

Use only under trees established in the grove for at least 1 year. Time application as indicated for specific areas, except application may be made any time of the year where sprinkler 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.

Arizona (except Yuma area) and California (except Imperial and Coachella Valleys): Apply 3 to 4 lbs per acre shortly after grove has been laid up in final form (nontillage program) in late fall or early winter. Alternatively, apply 2 lbs per acre in October or November and repeat at the same rate in March or April. Subsequent annual applications of 2 to 3 lbs per acre will usually give adequate weed control.

Florida and Puerto Rico: Make a single application of 4 to 8 lbs per acre, or apply 3 to 4 lbs per acre followed by the same rate 4 to 6 months later. On bearing citrus, apply any time when seasonal rains are expected, on nonbearing groves, apply when winter banks are pulled down.

For control of guineagrass, Eleusine, madder, and paragrass, perennials, use 1 qt. per 1,000 sq ft (40 lbs per acre) in sufficient water (min 4 gals per 1,000 sq ft) to provide thorough and uniform coverage. Apply in the spring before weed growth starts, or after removal of vegetation. Repeat treatment on a spot basis to control hard-to-kill species such as guineagrass. In bedded groves, do not treat water furrows between the beds as injury to the trees may result.

Texas: Apply 2 to 4 lbs per acre for annual weeds, use 4 to 6 lbs per acre for control of johnsongrass seedlings. Best results accompany application in the spring; well-established weeds should be eliminated by cultivation prior to treatment.

GRAPES:

Apply only to established vineyards at least 3 years old, as at and treatment to grape rows. On soils low in clay or organic matter (1 to 2%), severe plant injury may result if heavy rain or more than one inch of irrigation occurs soon after treatment. This risk must be assumed by the user.

East of the Rocky Mountains: Use only on soils with at least 2% organic matter (1 to 2%). Apply 2 to 3 lbs per acre on soils high in clay or organic matter, apply 3 to 4 lbs per acre. Apply in the spring, after bud break, to control germination and growth of a later weeds.

West of the Rocky Mountains: Apply in late October, December or January. For initial treatment, apply 3 to 4 lbs per acre, subsequent annual applications of 2 lbs per acre will usually give satisfactory weed control. Do not apply to vines with trunks less than 1 1/2" in diameter as injury may result.

New York and Pennsylvania—Perennial Grasses: Use only in established vineyards (at least 4 years old) for spot control of perennial grasses such as orchardgrass, quackgrass, or timothy. Apply in the spring as a band treatment (1 to 2 gals per 1,000 sq ft) under the trellis at the rate of 1 to 1 1/2 lbs per acre. Band width should not exceed 3 ft. Do not apply more than once every 4 years. Use only on heavy soils 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 grapes may result.

MACADAMIA NUTS—Hawaii:

Use only under trees established in the orchard for at least 1 year. Apply 2 to 6 lbs per acre immediately after harvest, preferably before weeds emerge, if weeds have emerged, add 1 pt Surfactant WK per 25 gals of spray. Retreat as needed but do not exceed 10 lbs per acre per year.

OLIVES—California:

Use only under trees established in the grove for at least 1 year. Apply 2 lbs per acre after grove has been laid up in final form in late October or November, repeat at same rate in March or April. Remove weed growth prior to treatment.

PAPAYAS:

Use only under trees established in the orchard for at least 1 year. Apply 2 to 5 lbs per acre, preferably before weeds emerge, if weeds have emerged, add 1 pt Surfactant WK per 25 gals of spray.

PEACHES:

Use "Karmex" DF alone, or apply as a tank mixture with "Sinbar".

"Karmex" DF Alone—Use only under trees established in the orchard for at least 3 years. Apply 2 to 5 lbs per acre in the early spring before weeds emerge or during the early seedling stage of weed growth. Do not apply within 4 months of harvest, in the Far West, do not apply within 8 months of harvest.

"Karmex" DF + "Sinbar"—Use only under trees established in the orchard for at least 2 years. Apply either in the spring or after harvest in the fall before weeds emerge or during early seedling stage of weed growth.

Soil Texture	Lbs Product Per Acre	
	1 to 2% Organic Matter "Karmex" DF + "Sinbar"	More Than 2% Organic Matter "Karmex" DF + "Sinbar"
Sandy loam	1 + 1	1 1/2 + 1 1/2
Loam, silt loam, silt	1 1/2 + 1 1/2	2 + 2
Clay loam, clay	2 + 2	2 + 2

Where crop is grown under furrow irrigation or under raised berm flood irrigation (trees 4" to 6" above waterline), apply only as a band treatment. Do not treat trees planted in the bottom of irrigation furrows, nor trees grown under flat flood or basin irrigation, as injury to trees may result. Where complete weed control to harvest is desired, additional weed control measures may be required during the growing season.

Georgia—On trees established for at least 2 years, apply 2 to 3 lbs per acre in the spring. Repeat application in the fall but do not exceed 5 lbs per acre per year. Add Du Pont Surfactant WK at 1 pint per 25 gals spray mixture to improve control of small, emerged weeds.

Where crop is grown under furrow irrigation or under raised berm flood irrigation (trees 4" to 6" above waterline), apply only as a band treatment. Do not treat trees planted in the bottom of irrigation furrows, nor trees grown under flat flood or basin irrigation, as injury to trees may result. Where complete weed control to harvest is desired, additional weed control measures may be required during the growing season.

PEARS:

Use only under trees established in the orchard for at least 1 year, do not treat varieties grafted on full dwarf root stocks. Apply 4 lbs per acre in the spring (March through May). In the Far West, treatment may be made in winter (December through February), or apply 2 lbs per acre as a postharvest treatment followed by 2 lbs in the spring.

PECANS:

Use "Karmex" DF alone or apply as a tank mixture with "Sinbar". Make a single band or broadcast application as a directed spray using a minimum of 20 gals of water per acre. Apply in the spring before weeds emerge or during the early seedling stage of growth.

Soil Texture	Lbs Product Per Acre	
	"Karmex" DF Alone*	Tank Mixture "Karmex" DF + "Sinbar"
Sandy loam	2	1 1/2 + 1 1/2
Loam, silt loam, silt	3	1 1/2 + 1 1/2
Clay loam, clay	4	2 + 2

* Use only on trees established in grove for at least 3 yrs and on soils with at least 1% organic matter.

** Use only on trees established in the grove for at least 1 yr and on soils with at least 1% organic matter.

Note: Do not use on eroded areas where subsoil or roots are exposed, nor on trees that are diseased or lacking in vigor or on trees planted in irrigation furrows, as injury to the trees may result.

• **PINEAPPLE—Hawaii and Florida**

Apply 4 to 8 lbs per acre as a broadcast spray just before or immediately after planting but prior to weed emergence. Use 4 lbs 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 2 lbs per acre at intervals of not less than 2 months. Additional applications to plant crop may be made as needed to interspace only using 2 lbs per acre. Do not apply more than 3 broadcast sprays (maximum 12 lbs per acre) prior to differentiation nor more than 16 lbs total per acre per plant crop. Treated areas may be planted to pineapple or sugarcane 1 year after last application.

• **WALNUTS (English)—California**

Use only under trees established in the orchard for at least 1 year. As an initial treatment, apply 1 to 5 lbs per acre after the orchard has been laid up in final form (nontillage program) in late fall or early winter. Retreat annually with 1 to 3 lbs per acre. Alternatively, apply 2 lbs per acre in October or November and repeat at same rate in March or April.

• **ORNAMENTAL CROPS**

(See Soil Limitations)

• **ORNAMENTAL BULB CROPS (Bulbous Iris, Narcissus)—Western Washington**

Make a single application of 4 lbs per acre. Apply after planting but no later than 4 weeks prior to bulb emergence, usually late September or October. Do not replant treated areas to any crop within 1 year after last application as injury to subsequent crops may result.

• **PLUMOSUS FERN—Florida**

Hand weed and mow ferns then make a single application of 3 lbs per acre within 3 to 5 days of mowing. Do not cultivate and disturb. After application as crop plants may result. Treat only established stands at least 1 year old.

• **TREE PLANTINGS—Colorado, Montana, Nebraska, North Dakota, South Dakota, Wyoming**

Use only under established plantings (1 year or older) of American elm, caragana, cottonwood, Douglas fir, green ash, honeylocust, Ponderosa pine, red cedar, Russian olive and Sitka spruce. Use 2 to 5 lbs per acre, apply as a band 4 ft wide in the tree row (2 ft on each side of row). For example, 1 lb of Karmex DF treats 135 ft of tree row with 1 ft each side of row at the rate of 5 lbs per acre. Apply as a drench to 1 ft layer in early spring before weeds start to grow and before trees leaf out. Do not apply to foliage of trees, nor under trees growing in low areas as injury to the trees may result.

• **NON-CROP WEED CONTROL**

"Karmex" DF is an effective herbicide for the control of many weeds on noncropland areas where bare ground is desired. The degree of control and duration of effect will vary with the amount of chemical applied, soil texture, rainfall and other conditions.

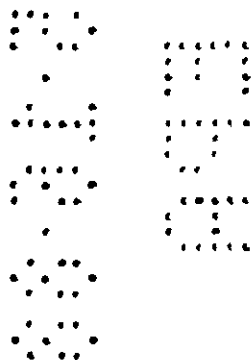
"Karmex" DF may be used as a preemergence treatment at any time of the year except when ground is frozen, provided adequate moisture is supplied by rainfall or artificial means to activate the herbicide. Best results are obtained if application is made to the soil shortly before weed growth begins. If dense growth is present, remove tops and spray the ground.

Increased contact activity (control of weeds) may be obtained by the addition of a nonionic surfactant of at least 80% active ingredient at 0.25 to 5% by volume of water (1.2 qts. to 100 gals. water). Apply as a drenching spray to actively growing weeds during warm weather when daily temperature will exceed 70°F.

Except for small areas, use a forced air, motor powered sprayer properly calibrated to insure a constant rate of application. Mix proper amount of "Karmex" DF into volume of water necessary to obtain uniform coverage. If surfactant is used, dilute with 10 parts of water and add as last ingredient to nearly full tank. Material must be kept in suspension at all times. Agitate by mechanical or hydraulic means in the spray tank. If bypass or return line is used, it should terminate at bottom of tank to minimize foaming. Openings in screen should be equal to or larger than 50 mesh.

General Weed Control. To control weeds for an extended period of time on noncropland such as utility, highway, pipeline and railroad right-of-way, petroleum tank farms, lumbering sites, storage areas, industrial plant sites, and around farm buildings, apply 5 to 15 lbs per acre to control most annual weeds.

Irrigation and Drainage Ditches. Apply 5 to 15 lbs per acre to control most annual weeds. Apply only when water is not in the ditch. For irrigation ditches, apply during the non-crop season, and when ditch is not in use. To minimize movement of "Karmex" DF with irrigation water (to avoid possible injury), it is essential that the herbicide be fixed in the soil by moisture. Apply before expected seasonal rainfall (if possible when soil in the ditch is still moist). Following treatment if rainfall has not totaled at least 4 inches, fill ditch with water and allow to stand for 72 hours, drain off and waste remaining water before using ditch. Do not treat any ditch into which roots of trees or other desirable plants may extend as injury may result.



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