

OCT 17 1995

Ms. Karen S. Stumpf
Ciba Crop Protection
Ciba-Geigy Corporation
P.O. Box 18300
Greensboro, NC 27419

Dear Ms. Stumpf:

Subject: Dual[®] DF herbicide
EPA Registration No. 100-747
Letter Dated September 13, 1995, Request To Amend
Precautionary Labeling To Reflect an Agency Review
dated April 6, 1995

The proposed precautionary labeling for the subject pesticide product registration has been reviewed and is acceptable under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, provided that you:

- o Submit one (1) printed copy of the final printed label before releasing the product for shipment, under the subject label.

If this condition is not complied with, the registration will be subject to cancellation in accordance with FIFRA, Section 6(a). Your release for shipment of the product constitutes acceptance of this condition.

A stamped copy of the labeling is enclosed for your records.

Sincerely yours,

Joanne L. Miller
Product Manager (23)
Fungicide-herbicide Branch
Registration Division (7505C)

Enclosure

CONCURRENCES							
SYMBOL	EWilson:diskette ABC25:09-26-95						
SURNAME							
DATE							

Dual DF

**25
Pounds
Net Weight
HERBICIDE**

ciba™

For weed control in corn, cotton, peanuts, pod crops, potatoes, safflowers, grain or forage sorghum, and soybeans

Active Ingredient: Metolachlor: 2-chloro-N-(2-ethyl-6-methylphenyl)-N-(2-methoxy-1-methylethyl) acetamide

55.0%

Inert Ingredients: 45.0%

Total: 100.0%

Dual DF is a water dispersible granule.

EPA Est. 11773-IA-1® EPA Reg. No. 100-747

EPA Est. 5905-IA-01®, EPA Est. 100-NC-2®

(Superscript is first letter of lot number on bag)

KEEP OUT OF REACH OF CHILDREN. WARNING/AVISO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

See additional precautionary statements and directions for use inside booklet. CGA 134L3D 045

DIRECTIONS FOR USE AND CONDITIONS OF SALE AND WARRANTY
IMPORTANT: Read the entire Directions for Use and the Conditions of Sale and Warranty before using this product. If terms are not acceptable, return the unopened product container at once.

Conditions of Sale and Warranty

The Directions for Use of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed carefully. However, 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 Ciba-Geigy or the Seller. All such risks shall be assumed by the Buyer.

Ciba-Geigy warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the Directions for Use subject to the inherent risks referred to above. **Ciba-Geigy makes no other express or implied warranty of Fitness or Merchantability or any other express or implied warranty. In no case shall Ciba-Geigy or the Seller be liable for consequential, special, or indirect damages resulting from the use or handling of this product.** Ciba-Geigy and the Seller offer this product, and the Buyer and user accept it, subject to the foregoing Conditions of Sale and Warranty, which may be varied only by agreement in writing signed by a duly authorized representative of Ciba-Geigy.

DIRECTIONS FOR USE

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

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours. Exception: If the product is soil-injected or soil-incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is:

- Coveralls
- Waterproof gloves
- Shoes plus socks
- Protective eyewear

FAILURE TO FOLLOW THE DIRECTIONS FOR USE AND PRECAUTIONS ON THIS LABEL MAY RESULT IN POOR WEED CONTROL, CROP INJURY, OR ILLEGAL RESIDUES.

To avoid spray drift, do not apply under windy conditions. Avoid spray overlap, as crop injury may result.

A. General Information

Observe all precautions and limitations on the labels of each product used in tank mixtures. Tank mixtures are permitted only in those states where the tank mix partner is registered.

Dual DF is a selective herbicide recommended as a preplant surface-applied, preplant incorporated, or preemergence treatment in water or fluid fertilizer for control of most annual grasses and certain broadleaf weeds in corn, cotton, peanuts, pod crops, potatoes, safflowers, grain forage sorghum, and soybeans.

Note: Do not use in nurseries, turf, or landscape plantings.

Where directions specify a Dual DF tank mixture with AAtrex formulation, other brands of atrazine may be used. Follow the rates, recommendations, and limitations on the AAtrex or respective atrazine product label, if other brands of atrazine are used.

If Dual DF is incorporated, any supplemental tillage before planting must not exceed the depth of incorporation.

Dry weather following preemergence application of Dual DF or a tank mixture may reduce effectiveness. Cultivate if weeds develop.

Where reference is made to weeds partially controlled, partial control can either mean erratic control from good to poor, or consistent control at a level below that generally considered acceptable for commercial weed control.

Precaution: Injury may occur following the use of Dual DF under abnormally high soil moisture conditions during early development of the crop.

Do not apply this product through any type of irrigation system.

1. Soil Textures and Herbicide Rates

Where rates are based on coarse-, medium-, or fine-textured soils, it is understood that soil textural classes are generally categorized as follows:

Coarse	Medium	Fine
Sand	Loam	Silty clay loam
Loamy sand	Silt	Sandy clay loam
Sandy loam	Silt loam	Sandy clay
		Clay

Within rate ranges in the rate tables and elsewhere on this label, use the lower rate on soils relatively coarse-textured or low in organic matter; use the higher rate on soils relatively fine-textured or high in organic matter.

Note: Dual DF may be applied preemergence alone, or in combination with tank mix partners specified on this label, following preplant incorporated herbicides when used according to their label recommendations, provided that such use is not prohibited on the respective labels.

Thoroughly clean sprayer or other application device before using. Dispose of cleaning solution in a responsible manner. Do not use a sprayer or applicator contaminated with any other materials, or crop damage or clogging of the application device may result.

2. Mixing Instructions

Use sprayers that provide accurate and uniform application.

When using sprayers with centrifugal pumps, the plumbing should be designed so that the in-line strainer should only be placed on the pressure side of the pump.

Use in-line screens no finer than 16-mesh for all types of sprayer setups. Tip screens should be no finer than 50-mesh.

ACCEPTED
with COMMENTS
In EPA Letter Dated
05/17/85

Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.
100-747

The agitation system of the sprayer should be designed to produce a rolling agitation across the bottom of the tank. Agitation is best accomplished by mounting at least 2 jet agitators on the bottom center of the tank pointing to each end. A sparge tube (pipe agitator) across the length of the bottom of the spray tank is another agitation option.

Rinse sprayer thoroughly with clean water immediately after use.

Note: Dual DF must be pre-slushed with water before mixing with fluid fertilizers or mixtures containing fluid fertilizers. Add the slurry to the mix tank using the procedure described below for mixing Dual DF alone or in tank mixtures.

Dual DF Alone: Mix Dual DF with water or fluid fertilizer and apply as a spray. Fill the spray tank 1/2-3/4 full with water or fluid fertilizer. Set the agitation system at its highest level before adding the Dual DF. Slowly add the proper amount of Dual DF, then add the rest of the water or fluid fertilizer. Provide vigorous agitation during mixing and application to maintain a uniform suspension.

Dual DF + Tank Mixtures: Fill the spray tank 1/2-3/4 full with water or fluid fertilizer. Set the agitation system to provide maximum movement of the spray solution. Add the Dual DF slowly and allow it to become uniformly dispersed in the spray tank. Dual DF should always be the first product introduced into the spray tank. Then add 2,4-D, AAtrex®, Balan®, Barvel®, Bladex®, Canopy®, Caparol® 4L, Command®, Cotoran® 4L, Eptam®, Gemini®, Laxone®, Lorox®, Lorox Plus®, Preview®, Princep®, Prowl®, Pursuit®, AAtrex + Princep®, Sceptor®, Sencor®, Sontalan®, or Treflan®, and allow it to become dispersed. Continue filling the tank with the rest of the water or fluid fertilizer. Add Gramoxone® Extra, or Roundup® if these products are being used, after all other tank mix partners have been mixed. Provide vigorous agitation during mixing and application to maintain a uniform suspension.

For tank mixtures with AAtrex, Barvel, Bladex, Canopy, Caparol 4L, Command, Cotoran®, Eptam, Gemini, Laxone, Lorox, Lorox Plus, Preview, Princep, Prowl®, Pursuit, AAtrex + Princep, Sceptor, Sencor, Sontalan, or Treflan, fluid fertilizers may replace all or part of the water as carrier, except in the AAtrex post-emergence and the Barvel post-emergence tank mixes. For tank mixtures with AAtrex, see additional mixing instructions on the AAtrex label. For each mixture, check compatibility with fluid fertilizer, as described below, before mixing in spray tank. For all tank mixtures, agitate during mixing and application to maintain a uniform suspension.

* See Special Mixing Instructions for tank mixtures with Bladex, Cotoran, and with AAtrex or Princep plus Prowl under the appropriate tank mixture section.

Compatibility Test: Since liquid fertilizers can vary, even within the same analysis, always check compatibility with herbicide(s) each time before use. Note: Dual DF must be pre-slushed with water before mixing with liquid fertilizers. Be especially careful when using complete suspension or fluid fertilizers as serious compatibility problems are more likely to occur. Commercial application equipment may improve compatibility in some instances. The following test assumes a spray volume of 25 gals./A. For other spray volumes, make appropriate changes in the ingredients. Check compatibility using this procedure:

1. Add 1 pt. of fertilizer to each of 2 one-qt. jars with tight lids.
2. To one of the jars, add 1/4 tsp. or 1.2 milliliters of a compatibility agent approved for this use, such as Complex® or Unite® (1/4 tsp. is equivalent to 2 pts./100 gals. spray). Shake or stir gently to mix.
3. To both jars, add the appropriate amount of herbicide(s). If more than one herbicide is used, add them separately with dry herbicides first, flowables next, and emulsifiable concentrates last. After each addition, shake or stir gently to thoroughly mix. The appropriate amount of herbicides for this test follows:

Dry herbicides: For each pound to be applied per acre, add 1.5 level teaspoons to each jar.

Liquid herbicides: For each pint to be applied per acre, add 0.5 teaspoon or 2.5 milliliters to each jar.

Note: For Dual DF tank mixtures with AAtrex + Princep, use 1/2-1/2 the amount of AAtrex specified above and the remainder as Princep, depending on whether the 1:2 or 1:1 ratio of AAtrex to Princep is to be applied.

4. After adding all ingredients, put lids on and tighten, and invert each jar 10 times to mix. Let the mixtures stand 15 minutes and then look for separation, large flakes, precipitates, gels, heavy oily film on the jar, or other signs of incompatibility. Determine if the compatibility agent is needed in the spray mixture by comparing the 2 jars. If either mixture separates, but can be remixed readily, the mixture can be sprayed as long as good agitation is used. If the mixtures are incompatible, test the following methods of improving compatibility: (A) slurry the dry herbicide(s) in water before addition, or (B) add 1/2 of the compatibility agent to the fertilizer and the other 1/2 to the emulsifiable concentrate or flowable herbicide before addition to the mixture. If incompatibility is still observed, do not use the mixture.

3. Application Procedures

Application Timing

Dual DF alone or in some tank mixtures with other labeled herbicides may be applied for weed control in certain crops at various times. Refer to the given crop section of the label to determine if application timings listed below are recommended.

1. **Preplant Surface-Applied:** For minimum-tillage or no-tillage systems only. Dual DF alone and some Dual DF tank mixtures may be applied up to 45 days before planting certain crops. Use only split applications for treatments made 30-45 days before planting, with 1/2 the recommended broadcast rate for the crop and soil texture applied initially and the remaining 1/2 at planting. Treatments less than 30 days before planting may be made either as a split or a single application. Refer to individual crop to determine if early preplant surface application is recommended. If weeds are present at the time of treatment, apply in a tank mixture combination with a contact herbicide (for example, Gramoxone Extra or Roundup). Observe directions for use, precautions, and restrictions on the label of the contact herbicide. To the extent possible, do not move treated soil out of the row or move untreated soil to the surface during planting, or weed control will be diminished.
2. **Preplant Incorporated:** Apply Dual DF to the soil and incorporate into the top 2 inches of soil within 14 days before planting, using a finishing disk, harrow, rolling cultivator, or similar implement capable of providing uniform 2-inch incorporation. Use a preplant incorporated application if furrow irrigation is used or when a period of dry weather after application is expected. If crop will be planted on beds, apply and incorporate Dual DF after bed formation unless specified otherwise.
3. **Preemergence:** Apply Dual DF during planting (behind the planter) or after planting, but before weeds or crops emerge.

Special Application Procedures - CA Only (Corn, Soybean, Pod Crops): Preplant Incorporated: Broadcast Dual DF to the soil and thoroughly incorporate with a disk or similar implement set to till 4-8 inches deep. For more thorough incorporation, till the soil in 2 different directions (cross-till). Crops may be planted on flat surface or on beds. Caution should be used when forming the beds that only soil from the Dual DF treated zone is used (i.e., untreated soil should not be brought to soil surface). If the application is made to preformed beds, incorporate Dual DF with a tillage implement set to till 2-4 inches deep. Care should be taken during tilling to keep the tilled (Dual DF treated) soil on the beds. Preemergence: Apply Dual DF after planting. Water with sprinkler or flood irrigation within 7-10 days.

Ground Application: Apply Dual DF alone or in tank mixtures by ground equipment in a minimum of 15 gals. of spray mixture per acre, unless otherwise specified.

Calculate the amount of herbicide needed for band treatment by the formula:

$$\frac{\text{band width in inches}}{\text{row width in inches}} \times \text{broadcast rate per acre} = \text{amount needed per acre of field}$$

B. Dual DF Applied Alone

1. Weeds Controlled

barryardgrass	green foxtail	yellow foxtail
(watergrass)	prairie cupgrass	yellow nutsedge
crabgrass	red rice	
crowfootgrass	signalgrass	carpetweed
fall panicum	(Brachiaria)	Eastern black nightshade
foxtail millet	southwestern	Florida pusley
giant foxtail	cupgrass	galinsoga
goosegrass	witchgrass	pigweed

Weeds Partially Controlled* common purslane, Florida beggarweed**, hairy nightshade, sandbur, seedling johnsongrass, shattercane, volunteer sorghum, wild proso millet

* See General Information section. Control of these weeds can be erratic due partially to variable weather conditions. Control may be improved by following these suggested procedures:

1. Thoroughly till moist soil to destroy germinating and emerged weeds. If Dual DF is to be applied preplant incorporated, this tillage may be used to incorporate Dual DF if uniform 2-inch incorporation is achieved as recommended under Application Procedures.
2. Plant crop into moist soil immediately after tillage. If Dual DF is to be used preemergence, apply at planting or immediately after planting.
3. If available, sprinkler irrigate within 2 days after application. Apply 1/2-1 inch of water. Use lower water volume (1/2 inch) on coarse-textured soils and higher volume (1 inch) on fine-textured soils.
4. If irrigation is not possible and rain does not occur within 2 days after planting and application, weed control may be decreased. Under these conditions, a uniform, shallow cultivation is recommended as soon as weeds emerge.

** For partial control of this weed, use a minimum of 3.6 lbs./A and apply preemergence.

2. **Rotational Crops:** Dual DF Alone: (1) If crop treated with Dual DF alone is lost, any crop on the label may be replanted immediately. Do not make a second broadcast application of Dual DF if the original application was banded and the second crop is planted in the untreated row middle. A second banded treatment may be applied. (2) Barley, oats, rye, or wheat may be planted 4 1/2 months following treatment. Alfalfa may be planted 4 months following application. Tomatoes may be planted 6 months following application. (3) Any crop on this label, in addition to root crops, tobacco, barley, buckwheat, milo, oats, rice, rye, wheat, cabbage, peppers, stone fruits, or tree nuts, may be planted in the spring following treatment. Clover may be seeded 9 months following application. Do not graze or feed forage or fodder from cotton to livestock. All other rotational crops may be planted 12 months after application. (4) Following a lay-by treatment or multiple treatments applied the previous season, any crop on this label in addition to tobacco, cabbage, peppers, stone fruits, or tree nuts may be planted in the spring. All other rotational crops may be planted 12 months after a lay-by application. Dual DF Tank Mixtures: For Rotational Crops restrictions for Dual DF used in tank mixtures, refer to the statements/restrictions above for Dual DF and to the respective product labels of any mixing partner(s) for additional statements/restrictions.

BEST COPY AVAILABLE

Important Notes: To avoid injury to rotational alfalfa or clover, (1) Do not apply more than 3 lbs. a.i. of metolachlor per acre (5.4 lbs. Dual DF) premergence (including preplant surface, preplant incorporated, post-plant incorporated, etc.). (2) Do not make lay-by or other postemergent applications of Dual DF.

C. Corn - Dual DF Alone

Apply Dual DF, either preplant surface, preplant incorporated, premergence, or lay-by, using the appropriate rate specified below.

Preplant Surface-Applied: Refer to instructions for use of Dual DF alone under Application Procedures. Use on medium- and fine-textured soils with minimum-tillage or no-tillage systems in CO, IA, IL, IN, KS, KY, MN, MO, MT, ND, NE, SD, TN, WI, and WY. Apply $\frac{1}{2}$ the recommended rate of Dual DF (4.5 lbs. / A on medium soils and 5.4 lbs. / A on fine soils) as a split treatment 30-45 days before planting and the remainder at planting. Applications made less than 30 days prior to planting may be as either a split or single treatment. Apply 3.6 lbs. / A on coarse soils not more than 2 weeks prior to planting.

On medium- and fine-textured soils with minimum- or no-tillage systems in DE, MD, MI, NY, OH, PA, VA, and WV, preplant surface applications may be applied following the directions for use above. If the amount of rainfall results in unsatisfactory length of weed control following the earlier treatment, a postemergence application of an appropriately labeled broadleaf and/or grass weed herbicide may be used, i.e., AAtrex, Bicep®, 2,4-D, Banvel, Basagran®, or bromoxynil (Brominal® or Buctril®). If the postemergence treatment includes the herbicide used preplant surface applied, do not exceed the total labeled rate for corn on a given soil texture. Observe all directions for use, precautions, and limitations on the label of the postemergent herbicide.

Preplant Incorporated or Premergence: Follow instructions for use of Dual DF alone under Application Procedures. On coarse soils, apply 2.75-3.6 lbs. / A of Dual DF if organic matter content is less than 3%, or 3.6 lbs. / A if organic matter content is 3% or greater. On medium soils, apply 3.6-4.5 lbs. / A of Dual DF. On fine soils, apply 3.6-4.5 lbs. / A of Dual DF if organic matter content is less than 3%, or 4.5-5.4 lbs. / A if organic matter content is 3% or greater.

Lay-by: To extend the duration of weed control in corn, a maximum rate of 5.4 lbs. / A of Dual DF may be applied after corn emergence until the corn plants reach 40 inches in height following any preplant surface-applied, preplant incorporated, or premergence herbicide application including Dual DF. For best results, applications should be made to soil free of emerged weeds and directed towards the base of corn plants in excess of 5 inches tall. The total Dual DF rate applied on corn during any one crop year should not exceed 10.9 lbs. / A, depending on soil texture.

Note for all applications to corn: To avoid possible illegal residues, do not graze or feed forage from treated areas for 30 days following application.

Shattercane and Wild Proso Millet - Partial Control: For more consistent partial control of shattercane or wild proso millet, apply 2.75-3.6 lbs. / A of Dual DF preplant incorporated followed by 2.75-3.6 lbs. / A of Dual DF premergence. Make the premergence application during or after planting, but before weeds and corn emerge. Apply the 3.6 lbs. / A rate of Dual DF when a heavy infestation of shattercane or wild proso millet is expected. A shallow cultivation may be needed following the premergence application to control any late emerging shattercane or wild proso millet plants.

Notes: (1) Do not apply more than the labeled application rate for a given soil texture per year, either as a single or split treatment, or illegal residues may result. (2) In corn, Dual DF may be used up to 7.25 lbs. / A as either a preplant surface, preplant incorporated, or premergence treatment on soils having an organic matter content between 6% and 20%. (3) In the event of escape of annual broadleaf weeds following a preplant surface, preplant incorporated, or premergence treatment of Dual DF, follow with a postemergence application of an appropriately labeled broadleaf and/or grass weed herbicide, i.e., AAtrex, Banvel, Basagran, Bicep, Brominal, Buctril, or 2,4-D. If the postemergence treatment includes the herbicide used in the earlier treatment, do not exceed the total labeled rate for corn on a given soil texture. (4) Brominal or Buctril may be applied postemergence alone or in tank-mix combination with AAtrex. Do not exceed 1.2 lbs. a.i. / A of AAtrex in tank-mix combination with Brominal or Buctril postemergence. Refer to the Brominal, Buctril, and AAtrex labels for specific rates and precautions. (5) Do not use Dual DF on peat or muck soils.

D. Corn - Dual DF Combinations

Dual DF in any tank mixture for corn (except Dual DF + AAtrex post-emergence and Dual DF + Banvel post-emergence) may be applied in water or fluid fertilizer. Use only water in the Dual DF + AAtrex or the Dual DF + Banvel post-emergence tank mixes.

Note: For all applications to corn, do not graze or feed forage from treated areas for 30 days following application, or possible illegal residues may result.

IMPORTANT: FOR TANK MIXTURES WITH AATREX (OR OTHER BRANDS OF ATRAZINE) - If applying Dual DF in tank mixture with AAtrex, all the restrictions and rate limitations appearing on the AAtrex label must be followed if more restrictive/protective than those on this label. In addition, if AAtrex is/must be applied at rates lower than those recommended on this label, broadleaf weed control may be affected. Refer to the AAtrex label for weeds controlled at the reduced rates.

1. Tank Mixture with AAtrex or Princep, or AAtrex + Princep - Preplant Surface, Preplant Incorporated, or Premergence

In addition to the weeds controlled by Dual DF alone, Dual DF + AAtrex or Princep, or Dual DF + AAtrex + Princep, applied preplant surface, preplant incorporated, or premergence, also controls the following weeds: browntop panicum, cocklebur, common purslane, hairy nightshade, lambequarters, morningglory, ragweed, smartweed, and velvetleaf.

Apply Dual DF + AAtrex or Princep, or Dual DF + AAtrex + Princep either preplant surface, preplant incorporated, or premergence.

Preplant Surface-Applied: Follow instructions for use of Dual DF alone under Application Procedures and under application instructions for Dual DF alone on corn. Apply Dual DF + AAtrex or Princep, or Dual DF + AAtrex + Princep on medium soils (4.5 lbs. / A of Dual DF + 3.2-4 pts. / A of AAtrex 4L or Princep 4L, or AAtrex 4L + Princep 4L combined) and on fine soils (4.5-5.4 lbs. / A of Dual DF + 4-5 pts. / A of AAtrex 4L or Princep 4L, or AAtrex 4L + Princep 4L combined in minimum-tillage and no-tillage systems in CO, IA, IL, IN, KS, KY, MN, MO, MT, ND, NE, SD, TN, WI, and WY. Apply the tank mixtures as a split or single treatment in those states and as indicated in the Dual DF Alone - Preplant Surface-Applied section of the label for corn. On coarse soils, apply 3.6 lbs. / A of Dual DF and 3.2 pts. / A of AAtrex 4L, or Princep 4L, or AAtrex 4L + Princep 4L combined.

Preplant Incorporated or Premergence: Follow instructions for use of Dual DF alone under Application Procedures. Apply Dual DF + AAtrex or Princep, or Dual DF + AAtrex + Princep using the appropriate rates from Table 1.

Note: Do not apply more than the labeled rate for a given soil texture per year, either as a split or single treatment, or illegal residues may result.

Shattercane and Wild Proso Millet - Partial Control

For more consistent partial control of shattercane or wild proso millet where Dual DF is applied in tank mixture or sequentially with other registered corn herbicides, the following applications may be made:

1. Apply 2.75-3.6 lbs. / A of Dual DF plus 2 lbs. a.i. / A of AAtrex or Princep preplant incorporated followed by 2.75-3.6 lbs. / A of Dual DF premergence. Make the premergence application during or after planting, but before weeds and corn emerge.
2. Apply Dual DF at 3.6 lbs. / A alone or in tank mix combination with up to 2 lbs. a.i. / A of AAtrex, Bladex, or Princep, preplant incorporated. Do not exceed the total rate of triazine herbicide recommended in combination with Dual DF for corn grown on a given soil texture. Follow with a post-directed application of Evik® BOW at 2.5 lbs. / A. Refer to the Evik BOW label for specific directions for the post-directed application.
3. Apply Eradicane® or Sutan® (or equivalent EPTC or butylate formulations) at labeled rates preplant incorporated followed by a premergence application of Dual DF at 2.75-3.6 lbs. / A. Do not use Eradicane or Sutan on soils where rapid degradation has been shown to occur. Make the premergence application during or after planting, but before weeds and corn emerge.
4. For partial control of wild proso millet only, apply Dual DF premergence at 2.75-3.6 lbs. / A followed by a postemergence application of Prowl plus Bladex at labeled rates. Refer to the Prowl and Bladex labels for application instructions. Postemergence applications of Prowl and Bladex may cause corn injury.

Precaution: When following the application regimes in numbers 1-4 above, a shallow cultivation may be needed after the premergence or post-emergence application to help control any late emerging shattercane or wild proso millet plants.

Note: Do not exceed a total of 3 lbs. a.i. / A of metolachlor (5.4 lbs. Dual DF) in the preplant incorporated plus premergence application on soils with less than 6% organic matter, or crop injury may occur.

Dual® DF

Table 1: Dual DF + AAtrex or Princep, or Dual DF + AAtrex + Princep, Preplant Incorporated or Preemergence - Corn

Soil Texture	Broadcast Rates Per Acre			
	Less Than 3% Organic Matter		3% Organic Matter or Greater	
	Dual DF + AAtrex Nine-O [®] * OR Princep Caliber 90 [®] *	Dual DF + AAtrex Nine-O [®] ** OR Princep Caliber 90 [®] **	Dual DF + AAtrex Nine-O [®] * OR Princep Caliber 90 [®] *	Dual DF + AAtrex Nine-O [®] ** OR Princep Caliber 90 [®] **
COARSE	2.25-2.75 lbs. + 1.1-2.2 lbs.	2.25-2.75 lbs. + 0.6-1.1 lbs. + 0.6-1.1 lbs.	2.75 lbs. + 1.3-2.2 lbs.	2.75 lbs. + 0.7-1.1 lbs. + 0.7-1.1 lbs.
MEDIUM	2.75-3.6 lbs. + 1.3-2.2 lbs.	2.75-3.6 lbs. + 0.7-1.1 lbs. + 0.7-1.1 lbs.	3.6 lbs. + 1.8-2.2 lbs.	3.6 lbs. + 0.9-1.1 lbs. + 0.9-1.1 lbs.
FINE	3.6 lbs. + 1.8-2.2 lbs.	3.6 lbs. + 0.9-1.1 lbs. + 0.9-1.1 lbs.	3.6-4.5 lbs. + 1.8-2.2 lbs.***	3.6-4.5 lbs. + 0.9-1.1 lbs.*** + 0.9-1.1 lbs.***
Muck or Peat (soils with more than 20% organic matter)	DO NOT USE			

*When using AAtrex 4L (or Princep 4L), or AAtrex 80W (or Princep 80W) use equivalent rates. One lb. of Nine-O or Caliber 90 equals 1.8 pts. of 4L or 1.1 lbs. 80W. Use Princep in preference to AAtrex when heavy infestations of crabgrass or fall panicum are expected. On soils having between 6% and 20% organic matter, Dual DF may be used up to 6.4 lbs. / A in tank mix combination with 2.8 lbs. / A of AAtrex Nine-O, or equivalent rates of AAtrex 80W or AAtrex 4L.

**When using the tank mixture of Dual DF + AAtrex Nine-O + Princep Caliber 90, use equal rates of each as shown when heavy broadleaf weed infestations are expected. When heavy infestations of crabgrass or fall panicum are expected, use a 1:2 ratio of AAtrex + Princep instead of the 1:1 ratio given in Table 1 above. (Example: Total AAtrex Nine-O + Princep Caliber 90 = 1.2 lbs. / A, use 0.4 lb. of AAtrex plus 0.8 lb. of Princep, respectively.) Refer to the asterisk (*) above for AAtrex 4L and 80W, and Princep 4L and 80W conversions.

*** For cocklebur, yellow nutsedge, and velvetleaf control on fine-textured soils above 3% organic matter, apply 2.25 lbs. / A of AAtrex Nine-O, or equivalent rates of AAtrex 4L or 80W, or the same total amount of AAtrex + Princep with 3.6-4.5 lbs. / A of Dual DF.

*When using AAtrex 4L or AAtrex 80W, use equivalent rates. One lb. of Nine-O equals 1.8 pts. of 4L or 1.1 lbs. 80W.

** For better control of cocklebur, morningglory, velvetleaf, and yellow nutsedge on fine-textured soils above 3% organic matter, apply 2.2 lbs. / A of AAtrex Nine-O, or equivalent rate of AAtrex 80W or AAtrex 4L, with 3.6-4.5 lbs. / A of Dual DF.

Tank mixtures of Dual DF plus AAtrex may be applied following use of any registered preplant surface-applied, preplant incorporated, or preemergence corn herbicide, including Dual DF plus AAtrex.

Note: The total Dual DF rate should not exceed 10.9 lbs., nor the AAtrex rate more than 2.5 lbs. a.i. / A during any one crop year, or illegal residues may result. Refer to the AAtrex label for geographic, soil-texture, and rotational restrictions.

3. Tank Mixture with Bladex - Preplant Incorporated or Preemergence

In addition to the weeds controlled by Dual DF alone, Dual DF + Bladex also controls the following broadleaf weeds: jimsonweed, lambsquarters, mustard, ragweed, smartweed, cocklebur*, morningglory*, and velvetleaf*.

*Partially controlled

Special Mixing Instructions: Fill the spray tank 1/4 full with water and start agitation. When using Bladex in tank mixtures, first add a compatibility agent, such as Complex or Unite at 2-3 pts. / 100 gals. of spray mixture. Then add the Bladex and allow it to become dispersed. Then add other herbicides registered for tank mix with Bladex, allowing each to fully disperse before adding the rest of the water or fluid fertilizer. Add the other herbicides in the following order: dry flowables and wettable powders first, then flowables, followed by emulsifiable concentrates. Add contact herbicides last, i.e., Gramoxone Extra or Roundup. Agitate during mixing and application to maintain a uniform suspension. Tank mixtures with Bladex should not be allowed to stand without agitation. Empty the spray tank during the spraying operation. If fluid fertilizers are used as carriers, check the compatibility of tank mixtures containing Bladex by using the Compatibility Test in the General Information section of this label.

Preplant Incorporated or Preemergence: Apply Dual DF + Bladex preplant incorporated or preemergence using the appropriate rate from Table 2. Follow instructions for use of Dual DF alone under Application Procedures.

2. Tank Mixture with AAtrex - Postemergence

Weeds Controlled

barnyardgrass (watergrass)	giant foxtail	kochia	purslane
crabgrass	green foxtail	lambsquarters	ragweed
crowfootgrass	yellow foxtail	mustard	smartweed
fall panicum	Jimsonweed	pigweed	velvetleaf
		prickly sida	

Weeds Partially Controlled: cocklebur, morningglory, yellow nutsedge.

Apply 2.75 lbs. / A of Dual DF + 1.3 lbs. / A of AAtrex Nine-O* on coarse soils, 3.6 lbs. / A of Dual DF + 1.8 lbs. / A of AAtrex Nine-O on medium soils, or 3.6-4.5 lbs. / A of Dual DF + 1.8-2.2 lbs. / A** of AAtrex Nine-O on fine soils. Apply this tank mixture before grass and broadleaf weeds pass the 2-leaf stage and before corn exceeds 5 inches in height. Application to weeds larger than the 2-leaf stage will generally result in unsatisfactory control.

Lay-by: Apply to corn plants not more than 12 inches tall. Applications to corn in excess of 5 inches should be directed to the base of the corn plants; whereas applications to corn plants less than 5 inches tall may be made over the top. Occasionally some corn leaf burn may result, but this should not affect later growth or yield. Do not apply this postemergence tank mixture in fluid fertilizer, or severe crop injury may occur.

Table 2: Dual DF + Bladex - Preplant Incorporated or Preemergence

Soil Texture	Broadcast Rates Per Acre			
	Percent Organic Matter in Soil			
	Less Than 1%	1-2.5%	2.5-4%	Over 4%
	Lbs. Dual DF + Ots. Bladex 4L*	Lbs. Dual DF + Ots. Bladex 4L*	Lbs. Dual DF + Ots. Bladex 4L*	Lbs. Dual DF + Ots. Bladex 4L*
COARSE Sand, loamy sand	DO NOT USE	2.25-2.75 + 0.8-1.4	2.75-3.2 + 1.4-1.8	3.6 + 1.75
COARSE Sandy loam	2.25 + 0.8	2.25-2.75 + 1.2-1.4	2.75-3.2 + 1.4-1.75	3.6 + 2
MEDIUM	2.75 + 1.2	2.75-3.2 + 1.4-1.75	3.75-3.8 + 1.75-2	4.1 + 2.25
FINE	2.75 + 1.4	3.2-3.8 + 1.6-2	3.6-4.1 + 2-2.25	4.5 + 2.5
Muck or Peat (soils with more than 20% organic matter)	DO NOT USE			

*When using Bladex 80W or Bladex 80DF, use equivalent rates. One qt. of 4L equals 1.25 lbs. of 80W or 1.1 lbs. of Bladex 80DF.

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4. Tank Mixtures with AAtrex + Bladex - Preplant Incorporated or Preemergence

Note: See Tank Mixtures with Bladex section of this label for specific mixing instructions.

Apply Dual DF + AAtrex + Bladex to corn using the rates from Table 3. Refer to the AAtrex and Bladex labels, as well as the General Information section of this label, for all directions, precautions, and limitations.

Table 3: Dual DF + AAtrex + Bladex - Preplant Incorporated or Preemergence

Soil Texture	Broadcast Rates Per Acre			
	Percent Organic Matter in Soil			
	Less Than 1%	1-2.5%	2.5-4%	Over 4%
	Lbs. Dual DF + Lbs. AAtrex Nine-O* + Qts. Bladex 4L*	Lbs. Dual DF + Lbs. AAtrex Nine-O* + Qts. Bladex 4L*	Lbs. Dual DF + Lbs. AAtrex Nine-O* + Qts. Bladex 4L*	Lbs. Dual DF + Lbs. AAtrex Nine-O* + Qts. Bladex 4L*
COARSE Sand, loamy sand	DO NOT USE	2.25-2.75 + 0.4-1.1 + 0.6-1	2.75-3.2 + 0.5-1.3 + 1-1.2	3.6 + 0.7-1.8 + 1.4-1.6
COARSE Sandy loam	2.25 + 0.5-1.1 + 0.6-1	2.25-2.75 + 0.7-1.3 + 1-1.2	2.75-3.2 + 0.9-1.8 + 1.2-1.6	3.6 + 1.1-2 + 1.6-2
MEDIUM Loam, silt loam, silt	2.75 + 0.7-1.3 + 1-1.2	2.75-3.2 + 0.7-1.8 + 1.2-1.6	3.2-3.6 + 0.9-1.8 + 1.4-1.6	4.1 + 1.1-2 + 1.8
FINE Sandy clay loam, silty clay loam, clay loam, sandy clay, silty clay	2.75 + 0.7-1.5 + 1.2-1.4	3.2-3.6 + 0.9-1.8 + 1.4-1.6	3.6-4.1 + 0.9-2 + 1.6-1.8	4.5 + 1.1-2.2 + 2
Muck or Peat (soils with more than 20% organic matter)	DO NOT USE			

*When using AAtrex 4L, AAtrex 80W, Bladex 80W, or Bladex 90DF, use equivalent rates. One lb. of AAtrex Nine-O equals 0.9 qt. (1.8 pts.) of AAtrex 4L, or 1.1 lbs. of AAtrex 80W. One qt. of Bladex 4L equals 1.25 lbs. of Bladex 80W or 1.1 lbs. of Bladex 90DF. Use lower rates of AAtrex in the mixture where broadleaf weeds are not a major problem. Use higher rates of AAtrex where heavy infestations of such broadleaf weeds as cocklebur, morningglory, smartweed, and velvetleaf are expected to be the dominant weeds present.

5. Tank Mixture with Banvel

Preemergence: Use this tank mixture only on field corn which is flat-planted (no furrows) in IA, IL, IN, MN, NE, OH, SD, and WI

In addition to the weeds controlled by Dual DF alone, Dual DF + Banvel, applied preemergence, also controls lambsquarters, ragweed, smartweed, cocklebur*, jimsonweed*, morningglory*, and velvetleaf*

*Partially controlled.

Apply Dual DF + Banvel preemergence. Broadcast 1 pt. / A of Banvel with 3.6 lbs. / A of Dual DF on medium soils, or with 3.6-4.5 lbs. / A of Dual DF on fine soils. Do not apply on coarse soils or on soils with less than 2.5% organic matter. Apply this tank mixture to the soil surface at planting or after planting, but before corn emerges. Plant corn at least 1.5 inches deep and apply behind planting equipment avoiding incorporation by the planter wheel or other seed covering device. Do not incorporate before corn emergence. If it is necessary to rotary hoe to break the soil crust, do not disturb the soil more than 1/2 inch deep.

Postemergence for Control of Pigweed (Mid-Atlantic states, including DE, MD, PA, VA, and WV): Apply 2.75-4.1 lbs. of Dual DF plus 0.5-1 pt. / A of Banvel or 1-2 pts. / A of Banvel II by ground equipment when pigweed plants are less than 3 inches tall and before corn exceeds 5 inches in height in a minimum of 20 gals. of spray per acre. Use the lower rate on coarse-textured and low organic matter soils. Use the higher rate on fine-textured and high organic matter soils.

Precautions: (1) Avoid drift to sensitive nontarget plants, such as soybeans, during application, or injury may occur. (2) Do not apply with aircraft.

6. Tank Mixture with AAtrex and Lorox for Control of Lambsquarters and Pigweed

For prolonged control of lambsquarters and pigweed in DE, MD, NJ, NY, PA, VA, and WV, Dual DF may be applied preemergence in tank mix combination with AAtrex + Lorox. Apply Dual DF and AAtrex according to the rates in Table 1 and Lorox according to the rates below.

Soil Texture	Broadcast Rate/A
Sandy loam (1-3% organic matter)	0.87 lb. Lorox*
Sandy loam (3-6% organic matter)	1.0 lb. Lorox*
Medium- and fine-textured soils (1-3% organic matter)	1.0 lb. Lorox*

*When using Lorox L or Lorox DF, use equivalent rates. One pt. of Lorox L equals one lb. of Lorox DF.

Observe all directions for use, precautions, and limitations on the Dual DF, AAtrex, and Lorox labels when applying these products in tank mix combinations.

7. Tank Mixture with AAtrex or Princep + Prowl for Prolonged Control of Lambsquarters and Pigweed in Field Corn Only (Northeast U.S., including MI, IN, KY, and States East of These)

For prolonged control of lambsquarters and pigweed, in addition to a broad spectrum of annual broadleaf and grass weeds, Dual DF in tank mix combination with AAtrex* or Princep + Prowl 4E may be applied after planting, but before corn or weeds emerge. Apply by ground equipment in a minimum of 10 gals. of water or 20 gals. of liquid fertilizer. Apply by air in a minimum of 5 gals. of water. Refer to Table 1 of this label for rates of Dual DF, AAtrex, or Princep to be applied. Apply Prowl 4E according to the rates below in Table 4.

*Do not apply Dual DF in tank mix combination with AAtrex 80W + Prowl, as this combination is not compatible. Other AAtrex formulations may be used.

Mixing Instructions: Fill the spray tank 1/4 full with water or fluid fertilizer and start agitation. To aid in compatibility, add a compatibility agent, such as Unite or "v-77", at 4 pts. / 100 gals. of spray mixture to the spray tank first, then add the AAtrex or Princep and allow it to become dispersed, then add Dual DF and Prowl 4E, and finally the rest of the water.

Table 4: Prowl 4E - Broadcast Rates Per Acre

Soil Texture	Percent Organic Matter in Soil		
	Less Than 1.5%	1.5-3%	Over 3%
COARSE	1.5-2.0 pts.	2.0 pts.	3.0 pts.
MEDIUM	2.0 pts.	3.0 pts.	3.0 pts.
FINE	2.0 pts.	3.0 pts.	3.0 pts.

Observe all directions for use, precautions, and limitations on the respective product labels when applying these products in tank mix combination. Refer to the Prowl 4E label for replanting instructions in the event of crop loss.

8. Tank Mixture with AAtrex, Bladex*, or Princep, AAtrex + Bladex or AAtrex + Princep, with Gramoxone Extra or Roundup for Minimum-Tillage or No-Tillage Systems

*See Tank Mixture with Bladex section of this label for special mixing instructions.

In minimum-tillage or no-tillage systems where corn is planted directly into a cover crop, stale seedbed, established sod, or previous crop residue, the contact herbicides Gramoxone Extra or Roundup may be added to a tank mix of Dual DF + AAtrex, Bladex or Princep, Dual DF + AAtrex + Bladex or Dual DF + AAtrex + Princep. When used as directed, the Gramoxone Extra portion of the tank mixture controls most emerged annual weeds and suppresses many perennial weeds. Roundup combinations will control emerged annual and perennial weeds when applied as directed on the Roundup label. The Dual DF + AAtrex or Princep, or Dual DF + AAtrex + Princep portion of the tank mixture provides pre-emergence control of the weeds listed on this label in the tank mixture section for Dual DF + AAtrex or Princep, or Dual DF + AAtrex + Princep - Preplant Surface, Preplant Incorporated, or Preemergence. The Dual DF + Bladex or Dual DF + AAtrex + Bladex tank mixture provides pre-emergence control of weeds listed on this label in the tank mixture sections with AAtrex and Bladex. Refer to Table 3 for Bladex rates.

Dual® DF

Application: Apply before, during, or after planting, but before the corn emerges, at the rates specified below. Add Gramoxone Extra or Roundup at the following broadcast rates:

Gramoxone Extra: 1.5-2.0, 2.0-2.5, or 2.5-3.0 pts./A to 1-3 inches, 3-6 inches, or 6-inch tall weeds, respectively. Apply surfactant at 1 or 2 pts./100 gals. of spray mixture with 75% or greater or 50-74% nonionic active ingredient, respectively. This treatment will not control weeds taller than 6 inches.

Note: Do not apply combinations containing Gramoxone Extra in suspension type liquid fertilizers because the activity of paraquat will be reduced.

Roundup: 1.5 qts./A for existing annual weeds, or 2-4 qts./A for existing perennial weeds. See the Roundup label for weeds controlled and recommended rates for specific weeds.

Apply in 20-60 gals. of water or fluid fertilizer per acre with ground equipment.

On coarse soils, apply 2.75 lbs./A of Dual DF with 1.3 lbs. AAtrex Nine-O* or Princep Caliber 90**, or with 0.7 lb. Nine-O** plus 0.7 lb. Caliber 90**. On medium soils, apply 3.6 lbs./A of Dual DF with 1.8 lbs. AAtrex Nine-O or Princep Caliber 90, or with 0.9 lb. Nine-O plus 0.9 lb. Caliber 90. On fine soils***, apply 3.6-4.5 lbs./A of Dual DF with 1.8-2.2 lbs. AAtrex Nine-O or Princep Caliber 90, or with 0.9-1.1 lbs. of Nine-O plus 0.9-1.1 lbs. Caliber 90.

*When using AAtrex 4L (or Princep 4L) or AAtrex 80W (or Princep 80W), use equivalent rates. One lb. of Nine-O or Caliber 90 equals 1.8 pts. of 4L or 1.1 lbs. of 80W. Use Princep in preference to AAtrex when heavy infestations of crabgrass or fall panicum are expected.

**When using the tank mixture of Dual DF + AAtrex Nine-O + Princep Caliber 90, use equal rates of AAtrex and Princep as shown when heavy broadleaf weed infestations are expected. When heavy infestations of crabgrass or fall panicum are expected, use a 1:2 ratio of AAtrex + Princep instead of the 1:1 ratio given. (Example: Total AAtrex Nine-O + Princep Caliber 90 = 1.8 lbs./A, use 0.6 lb. of AAtrex plus 1.2 lb. of Princep, respectively.) Refer to the asterisk (*) above for AAtrex 4L and 80W, and Princep 4L and Princep 80W conversions.

***For cocklebur, yellow nutsedge, and velvetleaf control on fine-textured soils above 3% organic matter, apply 2.25 lbs./A of AAtrex Nine-O, or equivalent rate of AAtrex 80W or AAtrex 4L, or the same total amount of AAtrex + Princep, with 3.6-4.5 lbs./A of Dual DF.

9. Tank Mixture with AAtrex; or AAtrex + 2,4-D; or AAtrex + 2,4-D + Banvel for Minimum-Tillage or No-Tillage Systems

In minimum-tillage or no-tillage systems where corn is planted directly into a cover crop, stale seedbed, established sod, or previous crop residues, Dual DF applied in combination with AAtrex will kill most emerged small annual weeds. Apply Dual DF + AAtrex before, during, or after planting, but before corn emerges according to the rates in Table 1.

Where heavy crop residues exist, add 0.8-1.8 pts./A of an appropriately labeled 3.8 lb. a.i./gal. 2,4-D amine (such as Weedar 64, Weedar 64A, DMA-4 Herbicide, or Formula 40) to the spray tank last and apply in a minimum of 25 gals. of carrier per acre.

As carriers, nitrogen solutions and complete liquid fertilizers, applied before corn emergence, enhance burndown of existing weeds, and therefore are recommended instead of water. Add X-77 surfactant at 1.0-2.0 qts./100 gals. of diluted spray, or another appropriate surfactant at its recommended rate. Apply before weeds exceed 3 inches in height. If alfalfa is present, add Banvel to the spray mixture at 0.33-0.5 pt./A and apply before alfalfa exceeds 6 inches in height.

For fields with existing sod grasses (e.g., bromegrass, orchardgrass, ryegrass, or timothy), when existing weeds exceed 3 inches in height or when very dry conditions exist, add Gramoxone Extra at the rate of 2.5 pts./A in place of or in addition to 2,4-D as indicated above. Do not apply Gramoxone Extra in suspension-type liquid fertilizer. Observe all directions for use, precautions, and limitations on the respective product labels when applying these products in tank mix combination.

10. Tank Mixture with Bladex*; or Bladex + AAtrex + 2,4-D; or Bladex + AAtrex + 2,4-D + Banvel** for Minimum-Tillage or No-Tillage Systems

*See Tank Mixture With Bladex section of this label for special mixing instructions.

**Apply the tank mixture with Banvel to field corn only.

In minimum-tillage or no-tillage systems where corn is planted directly into a cover crop, stale seedbed, established sod, or previous crop residues, Dual DF applied in combination with Bladex or Bladex + AAtrex will provide control of emerged small annual weeds, and extended control of those species on the Dual DF and Bladex labels.

Apply Dual DF in tank mix combination with Bladex according to the Tank Mixture with Bladex and Tank Mixture with AAtrex... sections of this label or the preemergence section of the Bladex and AAtrex labels. Where heavy crop residues exist at the time of treatment, follow directions for use in the Bladex Plus Dual DF tank mixture in the Minimum- or No-Till Weed Control section of the Bladex label. Using a minimum of 25 gals./A of carrier, add an appropriately labeled 2,4-D amine or low volatile ester to the spray tank last.

As carriers, nitrogen solutions and complete liquid fertilizers, applied before corn emergence, enhance burndown of existing weeds, and therefore are recommended instead of water. Add X-77 surfactant at 1.0-2.0 qts./100 gals. of diluted spray, or another appropriate surfactant at its recommended rate. Apply before weeds exceed 3 inches in height. If alfalfa is present, add Banvel to the spray mixture at 0.33-0.5 pt./A and apply before alfalfa exceeds 6 inches in height.

For fields with existing sod grasses (e.g., bromegrass, orchardgrass, ryegrass, or timothy), when existing weeds exceed 3 inches in height, or when very dry conditions exist, add Gramoxone Extra at the rate of 2.5 pts./A in place of or in addition to 2,4-D as indicated above. Do not apply Gramoxone Extra in suspension-type liquid fertilizer. Observe all directions for use, precautions, and limitations on the respective product labels when applying these products in tank mix combination.

E. Cotton - Dual DF Alone

Application: Apply Dual DF preemergence only in Area 1* at the rate of 1.4-2.75 lbs./A on sandy loams, 1.8-3.6 lbs./A on medium soils, or 2.75-3.6 lbs./A on fine soils. Apply Dual DF preplant incorporated or preemergence in Area 2** at 2.75 lbs./A on sandy loams, 2.75-3.6 lbs./A on medium soils, or 3.6 lbs./A on fine soils. Do not use on sands and loamy sand.

*Area 1 = AR, LA, MS, TN, and Bootheel of MO

**Area 2 = NM, OK, TX

Preplant Incorporated (NM, OK, and TX Only): Apply to the soil and incorporate into the top inch of soil immediately before planting, at planting, or after planting, but before crop or weeds emerge. Use a rolling cultivator or similar implement to uniformly incorporate not more than one inch deep. Use a preplant incorporated application if furrow irrigation is used or when a period of dry weather after application is expected. Where furrow irrigation is used, wet the top of the bed for best results. If the crop is to be planted on beds, apply and incorporate after bed formation. Cotton should be planted below the zone of incorporation; i.e., at least 1 inch on fine soils and 1.5 inches on coarse and medium soils. If incorporated prior to planting, use a planter that will result in a minimum of soil disturbance.

Note: For best control of yellow nutsedge and suppression of seedling johnsongrass, apply Dual DF preplant incorporated at the maximum rate for the soil texture, whether applied alone or mixed with Caparol 4L.

Preemergence: Apply to the soil surface at planting, or after planting, but before weeds or crop emerge.

Precautions: To avoid crop injury, (1) Do not apply Dual DF on sand or loamy sand soils or in areas where water is likely to "pond" over the bed; (2) To avoid concentration in the seed furrow, do not make broadcast applications of Dual DF to cotton planted in furrows more than 2 inches deep. Band applications may be made to cotton planted in furrows deeper than 2 inches, but band width should not exceed the width of the bottom of the furrow; and (3) Do not apply on Taloka silt loam.

Note: Do not graze or feed forage or fodder from cotton to livestock, or illegal residues may result.

F. Cotton - Dual DF Combinations

1. Tank Mixture with Caparol 4L

Dual DF tank mixtures with Caparol 4L may be applied in water or fluid fertilizer. When fluid fertilizer is used as a carrier for Dual DF, either alone or in combination with Caparol 4L, mix only the amount that will be sprayed in one operation. These mixtures should not be allowed to stand without agitation.

In addition to those weeds controlled by Dual DF alone, Dual DF + Caparol 4L, applied preplant incorporated or preemergence, also controls the following weeds: junglerice, wild oats, annual morningglory, groundcherry, hairy nightshade, lambsquarters, malva, mustard, prickly sida (teaweed), purslane, ragweed, and shallow-germinating seedlings of cocklebur and coffee-weed.

Preplant Incorporated or Preemergence: Apply Dual DF + Caparol 4L either preplant incorporated or preemergence using the appropriate rate from Table 5. Cotton should be planted below the zone of incorporation, i.e., at least 1.0 inch on fine soils and 1.5 inches on coarse and medium soils. If incorporated before planting, use a planter that will result in a minimum of soil disturbance.

Table 5: Dual DF + Caparol 4L - Cotton (NM, OK, TX)

Use Area	Soil Texture	Broadcast Rates Per Acre	
		Dual DF	Caparol 4L
ALL	Sand, loamy sand	DO NOT USE	
OK, and Blacklands and Gulf Coast of TX	Loams	2.25-3.6 lbs.	2.4 pts.
	Clays	3.6 lbs.	4.8 pts.
Rio Grande Valley of TX	Loams	2.25-3.6 lbs.	3.2 pts.
	Clays	3.6 lbs.	4.8 pts.
NM, High Plains, Rolling Plains, Edwards Plateau of TX, and Southwest TX	Sandy loam	2.25-2.75 lbs.	1.6 pts.
	Loams	2.25-3.6 lbs.	2.4 pts.
	Sandy clay loams	3.6 lbs.	2.4 pts.
	Other clay soils	3.6 lbs.	3.2 pts.

Precautions: (1) To avoid concentration in the seed furrow, do not make broadcast applications of Dual DF + Caparol 4L to cotton planted in furrows more than 2 inches deep. Band applications may be made to cotton planted in furrows deeper than 2 inches, but band width should not exceed the width of the bottom of the furrow. To avoid crop injury, (2) Do not apply on sand or loamy sand soils, or in areas where water is likely to "pond" over the bed; (3) Do not apply in cut areas of newly leveled fields, or in areas of excess salt; (4) Do not apply to glandless cotton varieties; and (5) Do not apply on Taloka silt loam.

Note: Do not graze or feed forage or fodder from cotton to livestock, or illegal residues may result.

Refer to the Caparol 4L label for further instructions and limitations.

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Dual® DF

2. Tank Mixture with Cotoran 4L

Dual DF may be applied in tank mixture with Cotoran 4L preemergence for control of those weeds controlled by Dual DF alone and those as listed on the Cotoran 4L label. This combination will also control spotted spurge, hyssop spurge, nodding spurge, and prostrate spurge. Apply to the soil surface at planting or after planting, but before weeds or crop emerge, using the appropriate rates from Table 6 below.

Mixing Instructions: Incompatibility may occur when tank mixing Dual DF and Cotoran 4L. To help overcome this condition, fill the spray tank 1/4 full with water or fluid fertilizer and start agitation, add the Cotoran 4L and allow to become dispersed. Add X-77 at 0.5% volume/volume final spray (4 pts./100 gals.), then add the Dual DF and finally the rest of the water or fluid fertilizer. Agitate during mixing and application to maintain a uniform suspension.

Note: Use only the 4L formulation as other formulation types of Cotoran are not compatible with Dual DF.

Table 6: Dual DF + Cotoran 4L - Cotton

Soil Texture	Broadcast Rates Per Acre		
	Dual DF (lbs.)		Cotoran 4L *** (pts.)
	Area 1*	Area 2**	
Sand, loamy sand	DO NOT USE		
Sandy loam	1.4-2.75	2.25-2.75	2
Loam, silt. silt loam	1.8-3.6	2.75-3.6	2-3.2
Fine soil	2.75-3.6	3.6	3.2-4

* Area 1 = AR, LA, MS, Bootheel of MO, and TN

** Area 2 = Eastern OK, Gulf Coast, Rio Grande Valley, and Eastern TX

*** When using Cotoran DF, use equivalent rates. Multiply pts. of Cotoran 4L by 0.8 to get lbs. of Cotoran DF.

Precautions: (1) Do not apply Dual DF + Cotoran on sand or loamy sand soils or in areas where water is likely to "pond" over the bed, or crop injury may occur. (2) To avoid concentration in the seed furrow, do not make broadcast applications of Dual DF + Cotoran to cotton planted in furrows more than 2 inches deep. Band applications may be made to cotton planted in furrows deeper than 2 inches, but band width should not exceed the width of the bottom of the furrow. (3) The use of Cotoran following the use of a systemic insecticide at planting may result in crop injury. (4) Do not use on Taloka silt loam, or crop injury may occur.

Refer to the Cotoran 4L label for further instructions, precautions, and limitations.

Note: To avoid possible illegal residues, do not feed treated forage or gin trash to livestock, or graze treated areas.

3. Tank Mixture of Dual DF or Dual DF + Cotoran 4L with Gramoxone Extra or Roundup for Minimum-Tillage or No-Tillage Systems (AL only).

In minimum-tillage or no-tillage systems where cotton is planted directly into a cover crop, stale seedbed, or previous crop residues, the contact herbicides Gramoxone Extra or Roundup may be added to a tank mix of either Dual DF or Dual DF + Cotoran 4L. When used as directed, the Gramoxone Extra portion of the tank mixture controls most emerged weeds and suppresses many perennial weeds. Roundup combinations will control emerged annual and perennial weeds when applied as directed on the Roundup label. The Dual DF and Dual DF + Cotoran 4L portion of the tank mixture provides preemergence control of the weeds listed on this label in the Dual DF and Dual DF + Cotoran 4L sections, respectively.

Refer to the label of each product used in combination and observe the planting details, information regarding application, geographical restrictions, and all other precautions and limitations. Refer to Mixing Instructions under Tank Mixture with Cotoran 4L section.

Application: Apply before, during, or after planting, but before the cotton emerges, at the rates specified below. Apply Dual DF at 2.25-2.75 lbs./A on sandy loams, medium, and fine-textured soils. Refer to Table 6 for the Cotoran DF rates.

Add Gramoxone Extra or Roundup at the following broadcast rates:

Gramoxone Extra: 1.5-2.0, 2.0-2.5, or 2.5-3.0 pts./A to 1-3 inches, 3-6 inches, or 6-inch tall weeds, respectively. Apply surfactant at 1 or 2 pts./100 gals. of spray mixture with 75% or greater or 50-74% nonionic active ingredient, respectively. This treatment will not control weeds taller than 6 inches.

Note: Do not apply combinations containing Gramoxone Extra in suspension type liquid fertilizers as the activity of paraquat will be reduced.

Roundup: 1.5 qts./A for existing annual weeds, or 2-4 qts./A for existing perennial weeds. See the Roundup label for weeds controlled and recommended rates for specific weeds.

Note: Do not apply Dual DF + Cotoran 4L + Roundup in tank mixture because of compatibility problems.

Apply in 20-60 gals. of water or fluid fertilizer per acre with ground equipment.

Precaution: If heavy rain occurs soon after application, crop injury may result, especially in poorly drained areas where water stands for several days, or where the seeding slit has not been properly closed. Refer to the Cotoran labels and the Tank Mixture with Cotoran DF section of this label for further instructions, precautions, and limitations.

G. Peanuts - Dual DF Alone

Apply Dual DF, either preplant incorporated, postplant incorporated, pre-emergence, or lay-by, using the appropriate rate specified below. Preplant incorporated or Pre-emergence: Follow instructions for use of Dual DF alone under Application Procedures. Postplant Incorporated: Apply and shallowly incorporate Dual DF into the soil after planting, but before peanut germination. Incorporation depth and incorporating implements must be kept above the seed, or seed will be damaged. Lay-by: Apply Dual DF to the soil immediately after the last normal cultivation.

Apply Dual DF alone preplant incorporated, pre-emergence, or lay-by, at a broadcast rate of 2.75-3.6 lbs./A in the Southeast* and 2.25-3.6 lbs./A in NM, OK, and TX.

* In the Southeast, use 3.6-5.4 lbs./A and apply pre-emergence for partial control of Florida beggarweed.

Notes: (1) Dual DF alone may be applied as directed after any of the following preplant incorporated herbicides when used according to their label recommendations: Balan at 3-4 qts./A; Trellan E.C. at 1 pt./A, or Vernam® at 2.33-3 pts./A. (2) Do not graze or feed peanut forage or fodder to livestock for 30 days following application, and (3) Do not apply within 90 days of harvest, or illegal residues may result.

H. Peanuts - Dual DF Combinations

1. Tank Mixture with Balan L.C.

Dual DF + Balan tank mixture applied preplant incorporated controls those weeds listed under Dual DF Applied Alone and those weeds as listed on the Balan label.

Apply 2.75-3.6 lbs./A of Dual DF + 3-4 qts./A of Balan in a minimum of 10 gals. of spray volume per acre for ground application or in a minimum of 5 gals. of spray volume per acre for aerial application. Follow the recommended procedures for Balan on the Balan label for soil preparation and incorporation of this tank mix. Apply and incorporate Dual DF + Balan up to 14 days prior to planting.

Note: Follow all restrictions and precautions on the Balan label.

2. Multiple Applications (Southeast Only: AL, FL, GA, NC, SC, VA)

Where weed pressure is heavy or where species difficult to control are expected, Dual DF is most effective when used as follows:

1st Application: Apply Dual DF preplant incorporated as directed under Peanuts-Dual DF Alone or apply Dual DF + Balan preplant incorporated as directed previously in this section. Refer to the respective section for weeds controlled.

2nd Application: Apply Dual DF any time from pre-emergence up to "ground cracking" at 2.75-5.4 lbs./A for extended control of weeds not yet emerged. Refer to the Dual DF Applied Alone section for a list of weeds controlled.

3rd Application: Apply Dual DF at lay-by as directed under Peanuts-Dual DF Alone. Use only when late germinating weeds are expected to be a problem. Refer to the Dual DF Applied Alone section for a list of weeds controlled.

Notes: To avoid possible illegal residues, (1) Do not apply more than the equivalent of 10.9 lbs. of Dual DF per acre during any one year. (2) If using other formulations of Dual, do not exceed a total of 6 lbs. of metolachlor active ingredient per acre per year. (3) Do not graze or feed peanut forage or fodder to livestock for 30 days following application, and (4) Do not apply within 90 days of harvest.

3. Tank Mixture or Sequentially with Pursuit

The tank mixture or sequential treatment of Dual DF and Pursuit controls all weeds controlled by Dual DF alone and by Pursuit alone. Refer to the Dual DF Applied Alone section for weeds controlled by Dual DF and to the Pursuit label for weeds controlled by Pursuit.

Refer to the respective labels for application methods, timing, rates, restrictions, and precautions, and use in accordance with the more restrictive label. Do not exceed the label rate of either product. Dual DF will not control emerged weeds.

4. Tank Mixture with Sonalan

The tank mixture controls all weeds controlled by Dual DF alone and by Sonalan alone. Refer to the Dual DF Applied Alone section for weeds controlled by Dual DF and to the Sonalan label for weeds controlled by Sonalan.

Apply Dual DF + Sonalan preplant incorporated using the appropriate rate from Table 7. Follow recommended soil preparation procedures for Sonalan. Refer to the Peanut Sonalan/Dual DF Tank Mixture label for incorporation specifications.

Table 7: Dual DF + Sonalan - Peanuts

Soil Texture	Broadcast Rates Per Acre			
	Southeast		NM, OK, TX	
	Dual DF	Sonalan	Dual DF	Sonalan
COARSE	2.75-3.6 lbs	1.25-2 pts.	2.25-3.6 lbs	1.75-2 pts.
MEDIUM	2.75-3.6 lbs	1.75-2.5 pts.	2.25-3.6 lbs	1.75-2.5 pts.
FINE	2.75-3.6 lbs	2.25-3 pts.	2.25-3.6 lbs	2.25-3 pts.

Note: Follow all use directions, limitations, precautions, and information regarding application to peanuts on the Dual DF and Sonalan labels.

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Dual® DF

I. Pod Crops – Dual DF Alone

Pod crops including garbanzo, great northern beans, kidney beans, lima beans, mung beans, navy beans, peas (English^{*}); southern peas, such as blackeye, pinkeye, crowder, etc.; pinto beans, snap beans (green, wax, string), lentils, and lupines (sweet, white, white sweet, and grain).

Apply Dual DF either preplant incorporated or preemergence using the appropriate rate specified below. Preplant Incorporated or Preemergence: Follow instructions for use of Dual DF alone under Application Procedures. On coarse soils with less than 3% organic matter, apply 2.75-3.6 lbs./A of Dual DF or 3.6 lbs./A if organic matter is 3% or greater. On medium soils, apply 3.6-4.5 lbs./A of Dual DF. On fine soils, apply 3.6-4.5 lbs./A of Dual DF if organic matter content is less than 3%, or 4.5-5.4 lbs./A if organic matter content is 3% or greater.

^{*}On English peas, use only preemergence applications. Do not use on English peas in northeastern U.S., or injury may occur.

Note: Do not cut for hay within 120 days following a Dual DF application, or illegal residues may result.

J. Pod Crops – Dual DF Combinations

Note: When applying Dual DF in combination on pod crops, do not cut for hay within 120 days following application, or illegal residues may result.

1. Tank Mixture and Sequential Applications with Eptam – Beans (Green or Dry)

This mixture controls all weeds controlled by Dual DF alone and by Eptam alone. Refer to the Dual DF Applied Alone section of this label for weeds controlled by Dual DF alone and to the Eptam label for weeds controlled by Eptam.

Preplant Incorporated: Follow instructions for use of Dual DF alone under Application Procedures. **Sequential:** Apply Eptam alone preplant incorporated, as specified on that label. Follow with a preemergence application of Dual DF, at rates specified for Dual DF alone, during planting (behind the planter) or after planting, but before the weeds or crop emerge.

Refer to the General Information section of this label and to the Eptam label for weather, cultural practices, and all other precautions and limitations that affect performance of these products.

Apply 3.5-4.5 pts./A of Eptam 7E^{*} with Dual DF as specified. On coarse soils, apply 2.25 lbs./A of Dual DF if organic matter content is less than 3%, or 2.75 lbs./A if organic matter content is 3% or greater. On medium soils, apply 2.75 lbs./A of Dual DF if organic matter content is less than 3%, or 3.6 lbs./A if organic matter content is 3% or greater. On fine soils, apply 3.6 lbs./A of Dual DF if organic matter is less than 3%, or 3.6-4.5 lbs./A if organic matter is 3% or greater.

^{*}Refer to the Eptam label for rate limitations depending on geographical area, and for species and varietal restrictions.

Precaution: Do not exceed 3.5 pts./A Eptam 7E on small white beans or green beans grown on coarse-textured soils.

2. Tank Mixture with Treflan – Beans (Dry – Kidney, Navy, Pinto, etc.; Lima; and Snap)

Dual DF + Treflan tank mix applied preplant incorporated controls those weeds listed under Dual DF Applied Alone and those weeds listed for Treflan alone on the Treflan label. Dual DF + Treflan may be applied by ground or by aerial equipment and incorporated up to 14 days prior to planting. Follow the recommended procedures on this label and on the Treflan label using equipment that provides uniform 2-inch incorporation.

Apply Dual DF + Treflan tank mix using the appropriate Dual DF rate specified for Dual DF alone, and the Treflan rate from the Dry Beans, and the Lima and Snap Beans sections of the Treflan label. Choose the product rate for the specific soil texture/organic matter classification and weed species expected.

Note: Follow all restrictions and precautions on the Treflan label and in the Dual DF Alone section of this label.

K. Potatoes – Dual DF Alone

Apply Dual DF either incorporated, preemergence, or after hilling/lay-by according to directions specified below for control of weeds listed under the General Information section. Within a rate range, use the lower rate on soils relatively coarse-textured or low in organic matter; use the higher rate on soils relatively fine-textured or high in organic matter. Effectiveness will be reduced if later cultural practices expose untreated soil.

Incorporated: Apply Dual DF at 2.75-5.4 lbs./A to the soil and incorporate into the top 3 inches before planting using a finishing disk, harrow, rolling cultivator, or similar implement. Planting and later cultural practices should not bring untreated soil to the surface. Postplant incorporated application may be made any time after planting to drag-off, but before potato emergence. Use an implement that evenly distributes Dual DF in the top 2 inches of soil. Do not damage potato seed pieces or sprouts with incorporation equipment.

Preemergence: Apply Dual DF at 2.75-5.4 lbs./A either after planting as a preemergence, delayed preemergence, after drag-off or hilling treatment, but before weeds emerge. Up to 7.25 lbs./A of Dual DF alone may be used where soil organic matter is between 6% and 20%.

After Hilling/Lay-by: Apply 4.5 lbs./A Dual DF after hilling/lay-by to control Dual DF-sensitive species for remainder of the growing season. This application will not control emerged weeds. It may be applied over a previous Dual DF application, but do not apply more than 10 lbs./A of Dual DF in a single crop season.

Precautions: (1) Do not use on muck or peat soils. If cool, wet soil conditions occur after application, Dual DF may delay maturity and/or reduce yield of Superior and other early maturing potato varieties. To avoid crop injury. (2) Do not use on sweet potatoes or yams. (3) Do not apply both as a preemergence and an incorporated treatment, and (4) Do not use in Kern County, CA.

Note: Potatoes treated with Dual DF should not be harvested within 60 days after the at-planting to drag-off application, or within 40 days after a lay-by application, or illegal residues may result.

L. Potatoes – Dual DF Combinations

1. Tank Mixture with Sencor or Lexone

In addition to those weeds controlled by Dual DF alone, Dual DF applied in tank mix combination with, or sequentially with, any of the registered Sencor or Lexone formulations, also controls the following broadleaf weeds: cocklebur^{*}, hairy nightshade^{*}, hemp sesbania, jimsonweed^{*}, lambsquarters, prickly sida, ragweed, smartweed, velvetleaf, Venice mallow, and wild mustard.

^{*}Partially controlled.

Dual DF at 2.75-5.4 lbs./A plus the labeled Sencor/Lexone use rate may be used preemergence through after last hilling. Apply 2.75-3.6 lbs./A of Dual DF on coarse soils and 3.6-5.4 lbs./A on other soil textures. Within this rate range, use the lower rate on soils relatively coarse-textured or low in organic matter; use the higher rate on soils relatively fine-textured or high in organic matter. Effectiveness will be reduced if later cultural practices expose untreated soil. Dual DF will not control emerged weeds.

Refer to the Sencor or Lexone labels for precautionary statements, restrictions, application information, and weeds controlled.

Precautions: (1) Postemergence applications to potatoes should be made only as a directed or semi-directed spray to avoid chlorosis, minor necrosis, or leaf distortion. To avoid crop injury. (2) Do not use Dual DF + Sencor or Lexone on potatoes in Kern County, CA, and (3) Do not apply to sweet potatoes or yams. (4) Do not use this tank mixture on muck or peat soils.

Notes: (1) Potatoes treated with Dual DF in tank mixture with Sencor or Lexone cannot be harvested within 60 days after application, or illegal residues may result. (2) Potatoes may not be harvested within 40 days after a lay-by application of Dual DF, or illegal residues may result.

2. Dual DF + Lorox Tank Mixture (East of Rocky Mountains)

Dual DF may be applied in a tank mix combination with any of the registered Lorox formulations as a preemergence broadcast application to potatoes. Apply to the soil surface after planting and before emergence of the crop or after final drag-off according to the rates specified in Table B.

Table B: Dual DF + Lorox – Potatoes (East of Rocky Mountains)

Soil Texture	Broadcast Rates Per Acre			
	1 to Less Than 3% Organic Matter		3 to 5% Organic Matter	
	Dual DF	Lorox [*]	Dual DF	Lorox [*]
COARSE Sandy loam	2.75 lbs.	1-1.5 lbs.	3.6 lbs.	1.5-2 lbs.
MEDIUM Loam, silt loam, silt	3.6 lbs.	1.5-2 lbs.	4.5-5.4 lbs.	2-2.5 lbs.

^{*}When using Lorox L or Lorox DF, use equivalent rates. One pt. of Lorox L equals one lb. of Lorox DF.

Precautions: To avoid crop injury, (1) Do not use on sands or loamy sands, and (2) Do not incorporate or spray over the top of emerged potatoes.

Refer to the General Information section of this label and to the Lorox label for precautionary statements, restrictions, application information, and weeds controlled.

M. Safflowers – Dual DF Alone

Preplant Incorporated or Preemergence: Follow instructions for use of Dual DF alone under Application Procedures.

On coarse soils, apply 2.75-3.6 lbs./A of Dual DF if organic matter content is less than 3%, or 3.6 lbs./A if organic matter is 3% or greater. On medium soils, apply 3.6-4.5 lbs./A of Dual DF. On fine soils, apply 3.6-4.5 lbs./A of Dual DF if organic matter content is less than 3%, or 4.5-5.4 lbs./A if organic matter content is 3% or greater.

N. Grain or Forage Sorghum (Seed treated with Concep®) – Dual DF Alone

Apply Dual DF, either preplant surface, preplant incorporated, or preemergence, using the appropriate rate specified below.

Preplant Surface-Applied: Refer to instructions for use of Dual DF under Application Procedures. For minimum-tillage or no-tillage systems only, Dual DF may be applied up to 45 days before planting in CO, IA, IL, KS, MO, NE, and SD. Use only split applications for treatments made 30-45 days prior to planting, with 1/2 of the broadcast rate applied initially and the remaining 1/2 at planting. Apply 4.1 lbs./A of Dual DF on medium soils or 4.5 lbs./A on fine soils. Treatments less than 30 days prior to planting may be made either as a split or single application. Apply 3.6 lbs./A of Dual DF on coarse soils not more than 2 weeks prior to planting.

Under dry conditions, irrigation after application is recommended to move Dual DF into the soil.

Preplant Incorporated or Preemergence: Refer to instructions for use of Dual DF under Application Procedures. Broadcast 2.75-3.6 lbs./A of Dual DF on coarse soils, 3.6-4.1 lbs./A on medium soils, or 3.6-4.5 lbs./A on fine soils.

Precautions: (1) If sorghum seed is not properly treated with Concep, Dual DF will severely injure the crop. (2) Under high soil moisture conditions prior to sorghum emergence, injury may occur following the use of Dual DF. The crop will normally outgrow this effect. (3) Do not use Dual DF on sorghum grown under dry mulch tillage, or injury may occur. (4) Except for the split preplant surface treatment, do not make more than one application per year, or illegal residues may result.

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O. Grain or Forage Sorghum (Seed treated with Concep) - Dual DF Combinations

Dual DF tank mixtures with AAtrex may be applied in water or fluid fertilizer. Apply Dual DF alone or in the tank mixtures only when the sorghum seed has been properly treated by the seed company with Concep.

IMPORTANT: FOR TANK MIXTURES WITH AATREX (OR OTHER BRANDS OF ATRAZINE) - If applying Dual DF in a tank mixture with AAtrex, all the restrictions and rate limitations appearing on the AAtrex label (highly erodible vs. non-highly erodible soils) must be followed if more restrictive/protective than those on this label. In addition, if AAtrex is/ must be applied at rates lower than those recommended on this label, broadleaf weed control may be affected. Refer to the AAtrex label for weeds controlled at the reduced rates.

Precautions: (1) Applications of Dual DF + AAtrex on highly alkaline soils or on eroded areas where calcareous subsoils are exposed may cause sorghum injury. (2) If sorghum seed is not properly treated with Concep, Dual DF + AAtrex may severely injure the crop. (3) Under high soil moisture conditions prior to sorghum emergence, injury may occur following the use of Dual DF + AAtrex. The crop will normally outgrow this effect. (4) Do not use Dual DF + AAtrex on sorghum grown under dry mulch tillage, or injury may occur. (5) Except for the split preplant surface treatment, do not make more than one application per year, or illegal residues may result.

1. Tank Mixture with AAtrex

In addition to the weeds controlled by Dual DF alone, Dual DF + AAtrex also controls the following broadleaf weeds when applied either preplant surface, preplant incorporated, or preemergence: cocklebur, common purslane, hairy nightshade, lambsquarters, morningglory, ragweed, smartweed, and velvetleaf.

Preplant Surface-Applied: Refer to instructions for use of Dual DF under Application Procedures. For minimum-tillage or no-tillage systems only, Dual DF + AAtrex may be applied up to 45 days prior to planting in IA, IL, eastern KS, MO, NE, and SD. Use only split applications for treatments made 30-45 days prior to planting, with 2/3 of the broadcast rate applied initially and the remaining 1/3 at planting. Apply 4.1 lbs./A of Dual DF + 1.7-2 lbs./A of AAtrex Nine-O* on medium soils with 1.5% organic matter or greater. Apply 4.1 lbs./A of Dual DF + 1.7-2 lbs./A of AAtrex Nine-O on fine soils with less than 1.5% organic matter, or apply 4.5 lbs./A of Dual DF + 2-2.2 lbs./A of AAtrex Nine-O on fine soils with 1.5% organic matter or greater. Treatments less than 30 days prior to planting may be made either as a split or single application. Under dry conditions, irrigation after application is recommended to move Dual DF + AAtrex into the soil.

Precautions: To avoid crop injury, (1) Do not use on coarse soils, and (2) Do not use on medium soils with less than 1.5% organic matter.

Preplant Incorporated or Preemergence: Refer to instructions for use of Dual DF under Application Procedures. On medium soils with 1.5% organic matter or greater, apply 2.75 lbs./A of Dual DF + 1.3 lbs./A of AAtrex Nine-O*. On fine soils with less than 1.5% organic matter, apply 2.75 lbs./A of Dual DF plus 1.3 lbs./A of AAtrex Nine-O; on fine soils with 1.5% organic matter or greater, apply 3.2-3.6 lbs./A of Dual DF plus 1.6-1.8 lbs./A of AAtrex Nine-O.

*When using AAtrex 80W or AAtrex 4L, use equivalent rates. One lb. of AAtrex Nine-O equals 1.1 lbs. of AAtrex 80W or 1.8 pts. of AAtrex 4L.

Precautions: To avoid crop injury, (1) Do not use on coarse soils, (2) Do not use on medium soils with less than 1.5% organic matter, (3) Do not use in NM, OK, or TX, except in northeast OK and the TX Gulf Coast and Blacklands areas, and (4) Do not apply preplant incorporated in AZ or the Imperial Valley of CA.

2. Tank Mixture of Dual DF or Dual DF + AAtrex, with Gramoxone Extra or Roundup for Minimum-Tillage or No-Tillage Systems

In minimum-tillage or no-tillage systems where sorghum (seed treated with Concep) is planted directly into a cover crop, stale seedbed, established sod, or previous crop residues, the contact herbicides Gramoxone Extra or Roundup may be tank mixed with Dual DF or Dual DF + AAtrex. When used as directed, the Gramoxone Extra portion of the tank mixture controls most emerged annual weeds and suppresses many perennial weeds. Roundup combinations will control emerged annual and perennial weeds when applied as directed on the Roundup label. The Dual DF or Dual DF + AAtrex portion of the tank mixture provides preemergence control of the weeds listed on this label under the respective sections.

Table 9: Dual DF + Sencor or Lexone - Soybeans

Soil Texture**	Broadcast Rates Per Acre			
	0.5% to Less Than 3% Organic Matter		3% Organic Matter or Greater	
	Dual DF	+ Sencor / Lexone DF*	Dual DF	+ Sencor / Lexone DF*
COARSE Loamy sand (over 2% organic matter), sandy loam	2.25-2.75 lbs.	+ 0.33 lb.	2.75 lbs.	+ 0.5 lb.
MEDIUM	2.75-3.6 lbs.	+ 0.5 lb.	3.6 lbs.	+ 0.67 lb.***
FINE	3.6 lbs.	+ 0.67 lb.	3.6-4.5 lbs.	+ 0.67 lb.
Mississippi Delta only Silty clay, clay	3.6 lbs.	+ 1.0 lb.	3.6-4.5 lbs.	+ 1.0 lb.
Muck or Peat (soils with more than 20% organic matter)	DO NOT USE			

*When using Sencor 4 or Lexone 4L, multiply lbs. of DF by 1.5 to get pts. per acre

** On silt sand and on loamy sand with less than 2% organic matter, do not use the tank mixture preemergence, or the sequential treatment. Do not use the tank mixture preplant incorporated on: silt sand, loamy sand, or sandy loam, or crop injury may occur.

*** Use 0.5 lb./A if applied preplant incorporated

Refer to the label of each product used in combination and observe the planting details, restrictions, and all other precautions and limitations.

Application: Apply before, during, or after planting, but before sorghum emerges, at the appropriate rates listed under Grain or Forage Sorghum - Dual DF Alone or - Dual DF Combinations - Dual DF + AAtrex, respectively. Add Gramoxone Extra or Roundup at the following broadcast rates:

Gramoxone Extra: 1.5-2.0, 2.0-2.5, or 2.5-3.0 pts./A to 1-3 inches, 3-6 inches, or 6-inch tall weeds, respectively. Apply surfactant at 1 or 2 pts./100 gals. of spray mixture with 75% or greater or 50-74% nonionic active ingredient, respectively. This treatment will not control weeds taller than 6 inches.

Roundup: 1.5 qts./A for control of existing annual weeds, or 2-4 qts./A for existing perennial weeds. See the Roundup label for weeds controlled and recommended rates for specific weeds.

Apply in a minimum of 20 gals. of water per acre with conventional spray equipment.

P. Soybeans - Dual DF Alone

Apply Dual DF either preplant surface-applied, preplant incorporated, or preemergence using the appropriate rate specified below. Preplant Surface-Applied, Preplant Incorporated, or Preemergence: Follow instructions for use of Dual DF alone under Application Procedures.

Preplant Surface-Applied: Use on medium and fine soils with minimum-tillage or no-tillage systems in CO, DE, IA, IL, IN, KS, KY, MD, MI, MN, MO, MT, ND, NE, NY, OH, PA, SD, TN, VA, WI, WV, and WY. Apply 2/3 the recommended rate of Dual DF (4.5 lbs./A on medium soils and 5.4 lbs./A on fine soils) as a split treatment 30-45 days prior to planting and the remainder at planting. Applications made less than 30 days before planting may be as either a split or single treatment. Apply 3.6 lbs./A on coarse soils not more than 2 weeks prior to planting.

Preplant Incorporated or Preemergence: On coarse soils, apply 2.75-3.6 lbs./A of Dual DF if organic matter content is less than 3%, or 3.6 lbs./A if organic matter content is 3% or greater. On medium soils, apply 3.6-4.5 lbs./A of Dual DF. On fine soils, apply 3.6-4.5 lbs./A of Dual DF if organic matter content is less than 3%, or 4.5-5.4 lbs./A if organic matter content is 3% or greater.

Note: On soybeans, Dual DF may be used up to 7.25 lbs./A as a preplant surface-applied, preplant incorporated, or preemergence treatment on soils having an organic matter content between 6% and 20%. The total Dual DF rate applied to soybeans during any one crop should not exceed 7.25 lbs./A.

Q. Soybeans - Dual DF Combinations

Water or fluid fertilizer may be used as carrier for Dual DF in combination with Sencor, Lexone, Lorax, Lorax Plus, Gemini, Canopy, Preview, Pursult, Scepter, Sonalan, or Command.

Note: For all of the following combinations, Dual DF may be used up to 6.4 lbs./A on soils having an organic matter content between 6% and 20%. The total Dual DF rate applied to soybeans during any one crop year should not exceed 7.25 lbs./A.

1. Tank Mixture with Sencor or Lexone

In addition to those weeds controlled by Dual DF alone, Dual DF + Sencor or Lexone, when applied as directed, also controls the following broadleaf weeds: cocklebur*, hairy nightshade, hemp sesbania, jimsonweed*, lambsquarters, prickly sida, ragweed, smartweed, velvetleaf, Venice mallow, and wild mustard.

*Partially controlled

Apply Dual DF and Sencor or Lexone preplant incorporated or preemergence using the appropriate rates from Table 9. Preplant Incorporated or Preemergence: Follow instructions for use of Dual DF alone under Application Procedures.

Sequential: Apply Dual DF alone Preplant Incorporated, as specified in Table 9 for this tank mixture. Follow with a preemergence application of Sencor or Lexone during planting (behind the planter) or after planting, but before weeds or soybeans emerge.

Refer to the Sencor or Lexone labels for planting details and soybean variety restrictions.

Dual® DF

2. Tank Mixture with Lorox

In addition to those weeds controlled by Dual DF alone, Dual DF + Lorox, applied preemergence, also controls the following broadleaf weeds: cocklebur*, jimsonweed*, lambquarters, morningglory*, prickly sida, ragweed, smartweed, velvetleaf*, Venice mallow, and wild mustard.

* Partially controlled.

Preemergence: Apply during planting (behind planter) or after planting, but before weeds or soybeans emerge. Refer to the Lorox label for planting details. Apply the appropriate rate from Table 10.

Table 10: Dual DF + Lorox - Soybeans

Soil Texture*	Broadcast Rates Per Acre			
	0.5% to Less Than 3% Organic Matter		3% Organic Matter or Greater	
	Dual DF	Lorox DF***	Dual DF	Lorox DF***
COARSE**	2.25 lbs.	+ 1 lb.	2.75 lbs.	+ 1-1.5 lbs.
MEDIUM	2.75 lbs.	+ 1-1.5 lbs.	3.6 lbs.	+ 1.5-2 lbs.
FINE	3.6 lbs.	+ 2 lbs.	3.6-4.5 lbs.	+ 2.5-3 lbs.
Muck or Peat (soils with more than 20% organic matter)	DO NOT USE			

* Do not use on sand, gravelly soils, or exposed subsoils.

** Do not use on loamy sand, except in the northeastern U.S. on loamy sand with over 1% organic matter.

*** When using Lorox L or Lorox DF, use equivalent rates. One pt. of Lorox L equals one lb. of Lorox DF.

Precaution: Do not use on soil with less than 0.5% organic matter, or crop injury may occur.

3. Tank Mixture with Treflan

Dual DF + Treflan tank mix applied preplant incorporated controls those weeds listed under Dual DF Applied Alone and those weeds listed for Treflan Alone on the Treflan label. Dual DF + Treflan may be applied by ground or by aerial equipment and incorporated up to 14 days before planting. Follow the recommended procedures on the Treflan and Dual DF labels using equipment that provides uniform 2-inch incorporation.

Apply Dual DF + Treflan tank mix using the appropriate rate from the Dual DF Alone section of this label and the Treflan Alone section of the Treflan label for the specific soil texture / organic matter classification and weed species expected.

Note: Follow all restrictions and precautions on the Treflan label and on the Dual DF Alone section of this label.

4. Tank Mixture with Scepter

This tank mixture controls all weeds controlled by Dual DF alone and by Scepter alone. Refer to the Dual DF Applied Alone section for weeds controlled by Dual DF and to the Scepter label for weeds controlled by Scepter. Refer to the Scepter label for geographical locations where this tank mixture may be applied.

Apply Dual DF + Scepter preplant incorporated or preemergence using rates in Table 11. Follow use directions under Application Instructions on the Scepter label. For preplant incorporated applications, apply and incorporate within 30 days before planting. Observe all other precautions and limitations on the Scepter labels.

Table 11: Dual DF + Scepter - Soybeans

Soil Texture	Broadcast Rates Per Acre			
	Less Than 3% Organic Matter		3% or More Organic Matter	
	Dual DF	Scepter	Dual DF	Scepter
COARSE	2.25 lbs.	0.67 pt.	2.75 lbs.	0.67 pt.
MEDIUM	2.75 lbs.	0.67 pt.	3.6 lbs.	0.67 pt.
FINE	3.6 lbs.	0.67 pt.	3.6-4.5 lbs.	0.67 pt.
Muck or Peat (soils with more than 20% organic matter)	DO NOT USE			

* Use the higher rate of Dual DF if heavy weed infestations are expected.

Notes: (1) Do not apply within 90 days of harvest, and (2) Do not graze or feed treated soybean forage, hay, or straw to livestock, or illegal residues may result.

5. Tank Mixture with Lorox Plus

This tank mixture controls all weeds controlled by Dual DF alone and by Lorox Plus alone. Refer to the Dual DF Applied Alone section for weeds controlled by Dual DF and to the Lorox Plus label for weeds controlled by Lorox Plus.

Apply Dual DF + Lorox Plus preemergence after planting, but before soybeans emerge using rates in Table 12.

Note: Follow all use directions, limitations, precautions, information regarding application to soybeans, and rotational restrictions on the Dual DF and Lorox Plus labels.

Table 12: Dual DF + Lorox Plus - Soybeans

Soil Texture	Broadcast Rates Per Acre	
	0.5-3% Organic Matter	
	Dual DF	Lorox Plus (80DF)
COARSE	2.25 lbs.	12-14 oz.
MEDIUM	2.75 lbs.	14-16 oz.
FINE	3.6 lbs.	16-18 oz.

Precaution: Do not apply to sand, or to any soil with less than 0.5% organic matter, or to any soil with pH greater than 6.8.

6. Tank Mixture with Gemini

This tank mixture controls all weeds controlled by Dual DF alone and by Gemini alone. Refer to the Dual DF Applied Alone section for weeds controlled by Dual DF and to the Gemini label for weeds controlled by Gemini.

Apply Dual DF + Gemini preemergence after planting, but before soybeans emerge using rates in Table 13.

Note: Follow all use directions, limitations, precautions, information regarding application to soybeans, and rotational restrictions on the Dual DF and Gemini labels.

Table 13: Dual DF + Gemini - Soybeans

Soil Texture	Broadcast Rates Per Acre	
	0.5-3% Organic Matter	
	Dual DF	Gemini (80DF)
COARSE (Sandy loam only)	2.25 lbs.	12-16 oz.
MEDIUM	2.75 lbs.	16-20 oz.
FINE	3.6 lbs.	20-24 oz.

Precaution: Do not apply to sand or loamy sand, or to any soil with less than 0.5% organic matter, or to any soil with pH greater than 7.0, except as noted on the Gemini label.

7. Tank Mixture with Canopy

This tank mixture controls all weeds controlled by Dual DF alone and by Canopy alone. Refer to the Dual DF Applied Alone section for weeds controlled by Dual DF and to the Canopy label for weeds controlled by Canopy.

Apply preplant incorporated or preemergence using the appropriate rates from Table 14. **Preplant Incorporated:** Apply within 2 weeks of planting. Uniformly incorporate into the top 1-2 inches of soil before planting soybeans. **Preemergence:** Apply after planting, but before soybeans emerge.

Note: Follow all use directions, varietal restrictions, limitations, precautions, information regarding application to soybeans, and rotational restrictions on the Dual DF and Canopy labels.

Table 14: Dual DF + Canopy - Soybeans

Soil Texture	Broadcast Rates Per Acre		
	Less Than 3% Organic Matter	Greater Than 3% Organic Matter	Canopy
	Dual DF	Dual DF	
COARSE	2.25 lbs.	2.75 lbs.	*
MEDIUM	2.75 lbs.	3.6 lbs.	*
FINE	3.6 lbs.	3.6-4.5 lbs.	*

* Refer to the Canopy label for appropriate rate according to geographical location, soil and organic matter classification, and pH limitations.

Precaution: Do not apply to sand, or to any soil with less than 0.5% organic matter, or to any soil with pH greater than 7.0, except as noted on the Canopy label.

8. Tank Mixture with Preview

This tank mixture controls all weeds controlled by Dual DF alone and by Preview alone. Refer to the Dual DF Applied Alone section for weeds controlled by Dual DF and to the Preview label for weeds controlled by Preview.

Apply preplant incorporated or preemergence using the appropriate rates from Table 15. **Preplant Incorporated:** Apply within 2 weeks of planting. Uniformly incorporate into the top 1-2 inches of soil before planting soybeans. **Preemergence:** Apply after planting, but before soybeans emerge.

Note: Follow all use directions, varietal restrictions, limitations, precautions, information regarding application to soybeans, and rotational restrictions on the Dual DF and Preview labels.

Table 15: Dual DF + Preview - Soybeans

Soil Texture	Broadcast Rates Per Acre			
	0.5-Less Than 3% Organic Matter		3-8% Organic Matter	
	Dual DF	Preview 75DF	Dual DF	Preview 75DF
COARSE	2.25 lbs.	6 oz.	2.75 lbs.	7 oz.
MEDIUM	2.75 lbs.	7 oz.	3.6 lbs.	8 oz.
FINE	3.6 lbs.	8 oz.	3.6-4.5 lbs.	9-10 oz.

Precaution: Do not apply to sand, or to any soil with less than 0.5% organic matter, or to any soil with pH greater than 6.8.

9. Tank Mixture with Command*

This tank mixture controls all weeds controlled by Dual DF alone and by Command alone. Refer to the Dual DF Applied Alone section for weeds controlled by Dual DF and to the Command label for weeds controlled by Command.

Apply Dual DF + Command preplant incorporated using rates in Table 16. Follow all Command application instructions as to incorporation interval, geographical location, equipment operation, soil moisture conditions, etc.

* Note: Before making applications, read and strictly follow all use directions, limitations, precautions, information regarding application to soybeans, and rotational restrictions on the Dual DF and Command labels.

Table 16: Dual DF + Command - Soybeans

Soil Texture	Broadcast Rates Per Acre			
	Dual DF		Command 4E	
	0.5-3% Organic Matter	Greater Than 3% Organic Matter	Northern Area	Southern Area
COARSE	2.25 lbs.	2.75 lbs.	1.5-2 pts.	2-2.5 pts.
MEDIUM	2.75 lbs.	3.6 lbs.	1.5-2 pts.	2-2.5 pts.
FINE	3.6 lbs.	3.6-4.5 lbs.	1.5-2 pts.	2-2.5 pts.

10. Tank Mixture with Sonalan

This tank mixture controls all weeds controlled by Dual DF alone and by Sonalan alone. Refer to the Dual DF Applied Alone section for weeds controlled by Dual DF and to the Sonalan label for weeds controlled by Sonalan.

Apply Dual DF and Sonalan preplant incorporated using the appropriate rates from Table 17.

Preplant Incorporated: Follow recommended soil preparation procedures for Sonalan. Refer to the Sonalan / Dual DF Tank Mixture label for incorporation specifications.

Sequential: Apply Sonalan alone preplant incorporated as specified on the Sonalan label. Follow with a preemergence application of Dual DF during planting (behind the planter) or after planting, but before weeds or soybeans emerge.

Table 17: Dual DF + Sonalan - Soybeans

Soil Texture	Broadcast Rates Per Acre			
	Less Than 3% Organic Matter		3% or More Organic Matter	
	Dual DF	Sonalan	Dual DF	Sonalan
COARSE	2.75-3.6 lbs.	1.25-2 pts.	3.6 lbs.	1.25-2 pts.
MEDIUM*	3.6-4.5 lbs.	1.75-2.5 pts.	3.6-4.5 lbs.	1.75-2.5 pts.
FINE*	3.6-4.5 lbs.	2.25-3 pts.	4.5-5.4 lbs.	2.25-3 pts.
Muck or Peat (soils with more than 20% organic matter)	DO NOT USE			

* For eastern black nightshade on these soils, apply Sonalan at 3 pts. / A on medium and 3.5 pts. / A on fine-textured soils, and follow with 2 incorporation passes.

Note: Follow all use directions, limitations, precautions, and information regarding application to soybeans on the Dual DF and Sonalan labels.

11. Tank Mixture with Pursuit

This tank mixture controls all weeds controlled by Dual DF alone and by Pursuit alone. Refer to the Dual DF Applied Alone section for weeds controlled by Dual DF and to the Pursuit label for weeds controlled by Pursuit. Refer to the Pursuit label for geographical locations where this tank mixture may be applied.

Apply Dual DF + Pursuit early preplant, preplant incorporated, or pre-emergence after planting using rates in Table 18. Application can be made in water or liquid fertilizer. Follow all use directions under Soil Applications on the Pursuit label. For early preplant and preplant incorporated applications, apply within 30 days before planting.

Note: Follow all use directions, limitations, precautions, information regarding application to soybeans, and rotational restrictions on the Dual DF and Pursuit labels.

Table 18: Dual DF + Pursuit - Soybeans

Soil Texture	Broadcast Rates Per Acre		
	Less Than 3% Organic Matter	3% or More Organic Matter	
	Dual DF	Dual DF	Pursuit
COARSE	2.25 lbs.	2.75 lbs.	0.25 pt.
MEDIUM	2.75 lbs.	3.6 lbs.	0.25 pt.
FINE	3.6 lbs.	3.6-4.5 lbs.	0.25 pt.

Sequential: Apply Dual DF early preplant, preplant incorporated, or pre-emergence after planting at 2.25 lbs. / A on coarse soils and 2.75 lbs. / A on medium and fine-textured soils. Follow with a sequential postemergence application of Pursuit to control emerged weeds according to the Pursuit label. Dual DF will improve the consistency and level of control from Pursuit on most grass species. Refer to the Pursuit postemergence label for a listing of weeds controlled, application rate, and growth stage limitations.

12. Tank Mixture with Loxone, Sencor, Scepter, Lorox, Lorox Plus, Gemini, Canopy, Preview, or Pursuit, plus Gramoxone Extra or Roundup for Minimum-Tillage or No-Tillage Systems

In minimum-tillage or no-tillage systems where soybeans are planted directly into a cover crop, stale seedbed, established sod, or previous crop residues, the contact herbicides Gramoxone Extra or Roundup may be added to a tank mix of either Dual DF + Sencor or Loxone, Dual DF + Scepter, Dual DF + Lorox, Dual DF + Lorox Plus, Dual DF + Gemini, Dual DF + Canopy, Dual DF + Preview, or Dual DF + Pursuit. When used as directed, the Gramoxone Extra portion of the tank mixture controls most emerged weeds and suppresses many perennial weeds. Roundup combinations will control emerged annual and perennial weeds when applied as directed on the Roundup label. The Dual DF + Sencor / Loxone, Scepter, Lorox, Lorox Plus, Gemini, Canopy, Preview, or Pursuit portion of the tank mixture provides preemergence control of the weeds listed on this label in the tank mixture section for Dual DF + Sencor / Loxone, Dual DF + Scepter, Dual DF + Lorox, Dual DF + Lorox Plus, Dual DF + Gemini, Dual DF + Canopy, Dual DF + Preview, and Dual DF + Pursuit, respectively.

Refer to the label of each product used in combination and observe the planting details, soybean variety restrictions, information regarding application to soybeans, geographical restrictions, and all other precautions and limitations.

Refer below for rates of Gramoxone Extra or Roundup, Dual DF + Sencor / Loxone, Dual DF + Scepter, Dual DF + Lorox, Dual DF + Lorox Plus, Dual DF + Gemini, Dual DF + Canopy, Dual DF + Preview, and Dual DF + Pursuit, respectively.

Application: Apply before, during, or after planting, but before the soybeans emerge, at the rates specified below. Add Gramoxone Extra or Roundup at the following broadcast rates:

Gramoxone Extra: 1.5-2.0, 2.0-2.5, or 2.5-3.0 pts. / A to 1-3 inches, 3-8 inches, or 8-inch tall weeds, respectively. Apply surfactant at 1 or 2 pts./100 gals. of spray mixture with 75% or greater of 50-74% nonionic active ingredient, respectively. This treatment will not control weeds taller than 6 inches.

Note: Do not apply combinations containing Gramoxone Extra in suspension type liquid fertilizers as the activity of paraquat will be reduced.

Roundup: 1.5 qts. / A for existing annual weeds, or 2-4 qts. / A for existing perennial weeds. See the Roundup label for weeds controlled and recommended rates for specific weeds.

Apply in 20-60 gals. of water or fluid fertilizer per acre with ground equipment.

Dual DF + Loxone/Sencor + Gramoxone Extra or Roundup

On loamy sand with over 2% organic matter, apply 2.75 lbs. / A of Dual DF + 0.33-0.5 lb. / A of Sencor or Loxone DF. On medium soils, apply 3.6 lbs. / A of Dual DF + 0.5-0.67 lb. / A of Sencor or Loxone DF. On fine soils, apply 3.6-4.5 lbs. / A of Dual DF + 0.67 lb. / A of Sencor or Loxone DF.

* When using Sencor 4 or Loxone 4L, multiply lbs. of DF by 1.5 to get pts. / A.

Precautions: To avoid crop injury, (1) Do not use this tank mixture on soil with less than 0.5% organic matter on alkaline soil with a pH over 7.4, or on all sand and on loamy sand with less than 2% organic matter; (2) if heavy rain occurs soon after application, crop injury may result, especially in poorly drained areas where water stands for several days, or where the seeding slit has not been properly closed.

Dual DF + Scepter + Gramoxone Extra or Roundup

On coarse soils, apply 2.75 lbs. / A of Dual DF + 0.67 pt. / A of Scepter. On medium soils, apply 3.6 lbs. / A of Dual DF + 0.67 pt. / A of Scepter. On fine soils, apply 4.5 lbs. / A of Dual DF + 0.67 pt. / A of Scepter.

Note: (1) Do not apply within 90 days of harvest, and (2) Do not graze or feed treated soybean forage, hay, or straw to livestock, or illegal residues may result.

Dual DF + Lorox + Gramoxone Extra or Roundup

On coarse soils*, apply 2.75 lbs. / A of Dual DF + 1-1.5 lbs. / A of Lorox DF**. On medium soils, apply 3.6 lbs. / A of Dual DF + 1.2 lbs. / A of Lorox DF. On fine soils, apply 3.6-4.5 lbs. / A of Dual DF + 2-3 lbs. / A of Lorox DF.

* Do not use on loamy sand, except in the northeastern U.S. on loam-sand with over 1% organic matter, or injury may occur. Do not use on sand, gravelly soils, or exposed subsoils, or injury may occur.

** When using Lorox L or Lorox DF, use equivalent rates. One pt. of Lo or L equals one lb. of Lorox DF.

Precaution: Do not use on soil with less than 0.5% organic matter, or crop injury may occur.

Dual DF + Lorox Plus + Gramoxone Extra or Roundup

Use only where soils have 0.5-3% organic matter. On coarse soils, apply 2.75 lbs. / A of Dual DF + 12-14 oz. / A of Lorox Plus 800F. On medium soils, apply 3.6 lbs. / A of Dual DF + 14-18 oz. / A of Lorox Plus. On fine soils, apply 3.6-4.5 lbs. / A of Dual DF + 16-18 oz. / A of Lorox Plus.

Precaution: Do not apply to sand or to any soil with pH greater than 6.8.

Dual DF + Gemini + Gramoxone Extra or Roundup

Use only where soils have 0.5-3% organic matter. On coarse soils (sandy loam only) apply 2.75 lbs. / A of Dual DF + 12-16 oz. / A of Gemini 800F. On medium soils, apply 3.6 lbs. / A of Dual DF + 16-20 oz. / A of Gemini. On fine soils, apply 3.6-4.5 lbs. / A of Dual DF + 20-24 oz. / A of Gemini.

Dual® DF

Precaution: Do not apply to sand or loamy sand, or to any soil with less than 0.5% organic matter, or to any soil with pH greater than 7.0, except as noted on the Gemini label.

Dual DF + Canopy + Gramoxone Extra or Roundup

Use only where soils have 0.5-5% organic matter. On coarse soils (except sand), apply 2.75 lbs. / A of Dual DF; on medium soils, apply 3.8 lbs. / A of Dual DF and on fine soils, apply 3.8-4.5 lbs. / A of Dual DF. Refer to the Canopy label for appropriate rate according to geographical location, soil and organic matter classification, pH limitations, and all other use directions.

Precaution: Do not apply to sand, or to any soil with less than 0.5% organic matter, or to any soil with pH greater than 7.0, except as noted on the Canopy label.

Dual DF + Preview + Gramoxone Extra or Roundup

Use only where soils have 0.5-5% organic matter. On coarse soils (except sand), apply 2.75 lbs. / A of Dual DF + 8"-7 oz. / A of Preview 75DF. On medium soils, apply 3.8 lbs. / A of Dual DF + 7"-8 oz. / A of Preview. On fine soils, apply 3.8-4.5 lbs. / A of Dual DF + 8" to 9-10 oz. / A of Preview.

* Use this rate where the soil organic matter is in the 0.5 to less than 3.0% range.

Precaution: Do not apply to sand, or to any soil with less than 0.5% organic matter, or to any soil with pH greater than 6.8.

Dual DF + Pursuit + Gramoxone Extra or Roundup

On coarse soils, apply 2.75 lbs. / A of Dual DF + 0.25 pt. / A of Pursuit. On medium soils, apply 3.8 lbs. / A of Dual DF + 0.25 pt. / A of Pursuit. On fine soils, apply 4.5 lbs. / A of Dual DF + 0.25 pt. / A of Pursuit.

R. Storage and Disposal

Storage

Store away from heat, flame, and any possible ignition sources.

Pesticide Disposal

Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited. Wastes resulting from the use of this product are toxic. Improper disposal of unused pesticide, spray mixture, or rinsate is a violation of federal law. Pesticide, spray mixture, or rinsate that cannot be used according to label instructions must be disposed of according to federal, state, or local procedures. For guidance in proper disposal methods, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office.

Container Disposal

Completely empty bag into application equipment. Dispose of empty bag in a sanitary landfill or by incineration, or by open burning, if allowed by state and local authorities. Stay out of smoke from burning bags.

For minor spills, leaks, etc., follow all precautions indicated on this label and clean up immediately. Take special care to avoid contamination of equipment and facilities during cleanup procedures and disposal of wastes. In the event of a major spill, fire, or other emergency, call 1-800-888-8372, day or night.

S. Precautionary Statements

Hazards to Humans and Domestic Animals

WARNING / AVISO

Causes substantial, but temporary eye injury. Do not get in eyes or on clothing. Wear goggles or face shield when using. Harmful if swallowed or absorbed through skin. Avoid contact with skin and clothing. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

Statement of Practical Treatment

If in eyes: Hold eyelids open and flush with a steady, gentle stream of water for 15 minutes. Get medical attention.

If swallowed: Drink promptly a large quantity of milk, egg white, gelatin solution, or, if these are not available, large quantities of water. Avoid alcohol. Induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person.

If on skin: Wash with plenty of soap and water. Get medical attention.

Note to Physician: If ingested, induce emesis and lavage stomach. Treat symptomatically.

Personal Protective Equipment

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks
- Protective eyewear

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Control Statements

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

Environmental Hazards

For terrestrial uses, do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash waters or rinsates.

Ground Water and Surface Water Advisory

Metolachlor has been identified in limited sampling of ground water and there is the possibility that it may leach through the soil to ground water, especially where soils are coarse and ground water is near the surface. Following application and during rainfall events that cause runoff, metolachlor may reach surface water bodies, including streams, rivers, and reservoirs.

Care must be taken when using this product to prevent back siphoning into wells, spills, or improper disposal of excess pesticide, spray mixtures, or rinsates.

Check-valves or antisiphoning devices must be used on all mixing equipment.

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