

279-3189

10/10/2002

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

OCT 10 2002

Callista Chukwunenyé
FMC Corporation
1735 Market St.
Philadelphia, Penn. 19103

Dear Dr. Chukwunenyé:

SUBJECT: Label Amendment
Spartan Herbicide
EPA Registration No. 279-3189
Your Resubmission Dated October 8, 2002

The label amendment referred to above, submitted in accordance with registration under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, is acceptable with the following provisions:

1. Throughout the labeling the product is referred to "Spartan Herbicide" and "Spartan DF". According to Agency records, in correspondence from you dated October 10, 1997 you dropped the "DF" throughout the label. In your final printed labels please revise the name to Spartan Herbicide.
2. Under the "Replanting Instructions" on the labeling, there is a typo that reads "Spartan DF 4F". Please correct it to read Spartan 4F.

A stamped copy is enclosed for your records. Please submit one (1) copy of your final printed labeling before you release the product for shipment. This amended labeling supersedes all previously accepted ones.

Sincerely yours,

Joanne I. Miller
Product Manager (23)
Herbicide Branch
Registration Division (7505C)

Enclosure

7505C Miller 10/10/02								
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SPARTAN

HERBICIDE

SPARTAN DF Herbicide

For Agricultural or Commercial Use Only

EPA Reg. No. 279-3189

EPA Est. 279-

Active Ingredient: By Wt.

Sulfentrazone*	75.0%
Inert Ingredients:	25.0%
	100.0%

* N-[2,4-dichloro-5-[4-(difluoromethyl)-4,5-dihydro-3-methyl-5-oxo-1H-1,2,4-triazol-1-yl]phenyl]methanesulfonamide
Contains 0.75 pounds of active ingredient per pound formulated.
U.S. Patent No. 4,818,275

KEEP OUT OF REACH OF CHILDREN

CAUTION FIRST AID

If Inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

If on Skin or Clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

If in Eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If Swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

PRECAUTIONARY STATEMENTS

Hazards to Humans (and Domestic Animals)

Caution

Causes moderate eye irritation. Harmful if inhaled, swallowed, or absorbed through skin. Avoid breathing vapor or spray mist. Avoid contact with skin, eyes or clothing.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear: long-sleeved shirt and long pants, waterproof gloves, and shoes plus socks.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product. 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.

User Safety Recommendations:

Users should:

- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Environmental Hazards

This pesticide is toxic to marine/estuarine invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to terrestrial and aquatic plants in neighboring areas. Do not contaminate water when disposing of equipment washwaters or rinsate.

Groundwater advisory: This chemical is known to leach through soil into groundwater under certain conditions as a result of label use.

Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

Do not use on coarse soils classified as sand which have less than 1% organic matter.

Surface water advisory: Sulfentrazone can contaminate surface water through spray drift. Under some conditions, sulfentrazone may also have a high potential for runoff into surface water (primarily via dissolution in runoff water), for several to many months post-application. These include poorly draining or wet soils with readily visible slopes toward adjacent surface waters, frequently flooded areas, areas overlying extremely shallow groundwater, areas with in-field canals or ditches that drain to surface water, areas not separated from adjacent surface waters with vegetated filter strips, and areas over-lying tile drainage systems that drain to surface waters.

Physical/Chemical Hazards

Do not use or store near heat or open flame.

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Read all of the label prior to use.

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FMC
FMC Corporation
Agricultural Products Group
Philadelphia PA 19103

Spartan DF_3_6-26-2002

ACCEPTED
with COMMENTS
In EPA Letter Dated

OCT 10 2002

Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.
279-3189

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 by air or through any type of irrigation system.
- Do not apply Spartan DF more than once per season.
- 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.

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 over long-sleeved shirt and long pants, waterproof gloves, and shoes plus socks.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

Pesticide Storage

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

Store in a cool, dry place and avoid excess heat.

In case of spill, avoid contact, isolate area and keep out animals and unprotected persons. Confine spills. Call FMC: (800) 331-3148.

To confine spill: If liquid, dike surrounding area or absorb with sand, cat litter or commercial clay. If dry material, cover to prevent dispersal. Place damaged package in a holding container. Identify contents.

Pesticide Disposal

If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional office for guidance.

Container Disposal

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

GENERAL INFORMATION

Spartan DF is a selective soil-applied herbicide for the control of selective broadleaf weeds, grasses and sedges. When applied according to directions, it will provide control of susceptible species.

Spartan DF is formulated as a 75% water dispersible granule containing the active ingredient, sulfentrazone.

The mode of action of Spartan DF involves uptake by weed roots and shoots. Preemergence and preplant incorporated applications of Spartan DF require rainfall or subsequent irrigation to activate the herbicide. The amount of rainfall or irrigation required for activation following application depends on existing soil moisture, organic matter content and soil texture. If adequate moisture (1/2" to 1") is not received within 7 to 10 days after the Spartan DF treatment, a shallow incorporation may be needed to obtain desired weed control. When sufficient moisture is received after dry conditions, Spartan DF will provide some control of susceptible germinating weeds. Soil applications of Spartan DF should be made within 72

hours after planting to prevent injury to crop seedlings. When applications after planting are delayed, injury may occur if seeds are germinating or near the soil surface.

Observe all instructions, crop restrictions, mixing directions, application precautions, replanting directions, rotational crop guidelines and other label information of each product when tank mixing with Spartan DF.

Proper handling instructions: Spartan DF Herbicide may not be mixed or loaded within 50 feet of any wells (including abandoned wells and drainage wells), sink holes, perennial or intermittent streams and rivers, and natural or impounded lakes and reservoirs. This setback does not apply to properly capped or plugged abandoned wells and does not apply to impervious pad or properly diked mixing/loading areas.

Operations that involve mixing, loading, rinsing, or washing of this product into or from pesticide handling or application equipment or containers within 50 feet of any well are prohibited unless conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be positioned on or moved across the pad. Such a pad shall be designed and maintained to contain any product spills or equipment leaks, container or equipment rinse or washwater, and rainwater that may fall on the pad. Surface water shall not be allowed to either flow over or from the pad, which means the pad must be self contained. The pad shall be sloped to facilitate material removal. An unroofed pad shall be of sufficient capacity to contain at a minimum 110% of the capacity of the largest pesticide container or application equipment on the pad. A pad that is covered by a roof of sufficient size to completely exclude precipitation from contact with the pad shall have a minimum containment capacity of 100% of the capacity of the largest pesticide container or application equipment on the pad. Containment capacities as described above shall be maintained at all times. The above specific minimum containment capacities do not apply to vehicles when delivering pesticide shipments to the mixing/loading site. States may have in effect additional requirements regarding wellhead setbacks and operational containment.

Product must be used in a manner that will prevent back siphoning in wells, spills or improper disposal of excess pesticide, spray mixtures or rinsates.

APPLICATION INFORMATION

Utilize a boom and nozzle sprayer equipped with the appropriate nozzles, spray tips and screens and adjusted to provide optimum spray distribution and coverage at the appropriate operating pressures. Utilize nozzles which produce minimal amounts of fine spray droplets to avoid spray drift or inadequate soil coverage.

Apply a minimum of 10 gallons of finished spray per acre by ground only. Be aware that overlaps and slower ground speeds while starting, stopping or turning while spraying may result in excessive application and subsequent crop response.

Water must be used as the carrier for Spartan DF when applied alone, or when tank mixed with other herbicides.

Continuous agitation during application is required. Avoid overlaps. Shut off spray booms while turning, slowing or stopping, as over application may result. Avoid storing Spartan DF spray mixtures overnight as settling of product and difficulty of resuspending may occur.

To avoid injury to sensitive crops, spray equipment used for Spartan DF applications must be drained and thoroughly cleaned with water plus ammonia before being used to apply other products.

Do not allow spray to drift onto adjacent crops or plants as injury to other plants may occur.

Spray Drift Precautions: To avoid drift, do not apply when wind speeds exceed 10 mph. Do not exceed spray pressures of 40 psi unless specified by the manufacturer of drift reducing spray tips and nozzles.

Spartan DF Product Use Rates: Apply Spartan DF preemergence, preplant incorporated, no-till, minimum till, or fall application as directed in the following rate table.

Use higher rates for soils of pH less than 7.0.

Spartan DF Herbicide Use Rate Table			
Preemergence, Preplant Incorporated, No-till, Minimum Till and Fall Application			
Broadcast Rate	Ounces Spartan DF Herbicide per acre		
% Organic Matter	Soil Texture		
	Coarse	Medium	Fine
<1	3.0 - 4.0 *	4.0 - 5.3 *	5.3
1-3	4.0 - 5.3 *	5.3 - 6.7 *	6.7
>3	5.3 - 6.7 *	6.7 - 8.0 *	8.0

Refer to the information on soil types under the COARSE, MEDIUM, and FINE categories in the table below.

*Use higher rates for soils of pH less than 7.0.

Soil Classification Chart

COARSE	MEDIUM	FINE
Sands	Sandy clay loams	Silty clay loams
Loamy sands	Sandy clays	Silty clays
Sandy loams	Loams	Clay loams
	Silt loams	Clays
	Silts	

Band Treatment Applications

For band treatment, apply the broadcast equivalent rate and volume per acre. To determine these:

$$\frac{\text{Band Width In inches}}{\text{Row Width In inches}} \times \text{Broadcast Rate Per Acre} = \text{Band rate per acre}$$

$$\frac{\text{Band Width In inches}}{\text{Row Width In inches}} \times \text{Broadcast Volume Per Acre} = \text{Band volume per acre}$$

SPRAY TANK PREPARATION

It is important that spray equipment is clean and free of existing pesticide deposits before preparing Spartan DF spray mixtures. Follow the spray tank clean out procedures specified on the label of product or products previously applied.

MIXING INSTRUCTIONS

Spartan DF herbicide may be tank mixed with other herbicides for the control of additional weed species. Mixtures with some other pesticides have not been tested. Conduct appropriate compatibility tests prior to tank mixing with other pesticides. Follow all precautions and restrictions on the tank mix partner label. For best results fill spray tank with one fourth of the volume of clean water needed for the field to be treated. Start agitation system. Prepare a slurry of Spartan DF in a clean container using clean water. Slowly add the Spartan DF/water slurry. Carefully rinse the slurry container adding the rinsate to the spray tank. Complete filling the spray tank to the desired level. Continuous spray tank agitation is required at all times to maintain a uniform spray solution. Make sure Spartan DF is thoroughly mixed before application or before adding another product to the spray tank.

For tank mixtures with other herbicide(s), a jar test should be conducted to ensure product compatibility before mixing. Provided the jar test indicates the mixture to be compatible, prepare the tank mixture as follows: Fill spray tank one fourth full with water. With agitator operating, add the recommended amounts of ingredients using the following order: dry granules first, liquid suspensions (flowables) second. Add EC products followed by water soluble products to tank as agitation continues and tank is filled with water. All applicable directions, restrictions and precautions for the tank mixture herbicide(s) must be followed.

Use Spartan DF spray mixture immediately after mixing. Do not store mixture.

If Spartan DF was tank mixed with other herbicides, all additional directions, restrictions and precautions for the tank mixture herbicides must also be followed.

SPRAYER EQUIPMENT CLEAN-OUT:

After spraying Spartan DF and before using sprayer equipment for any other applications, the sprayer must be thoroughly cleaned using the following procedure:

1. Drain sprayer tank, hoses, and spray boom and thoroughly rinse the inside of the sprayer tank with clean water to remove sediment and residues. In addition, thoroughly flush sprayer hoses, boom and nozzles with clean water.
2. Fill the tank 1/2 full with clean water, and add appropriate detergent or ammonia (follow manufacturer's directions for use). Fill the tank to capacity and operate the sprayer for 15 minutes to flush hoses, boom, and nozzles.
3. Drain the sprayer system. Rinse the tank with clean water and flush through the hoses, boom, and nozzles. Remove and clean spray tips and screens separately.
4. Properly dispose of all cleaning solution and rinsate in accordance with Federal, State and local regulations and guidelines.
5. Do not drain or flush equipment on or near desirable trees or plants. Do not contaminate any body of water including irrigation water that may be used on other crops.

APPLICATION WITH DRY FERTILIZERS

Spartan DF may be impregnated on dry fertilizers. When applied as directed with adequate soil coverage. Spartan DF dry bulk fertilizer mixtures will provide satisfactory weed control, but adequate soil coverage is essential.

Follow all Spartan DF label directions regarding product use rates per acre, registered crops, incorporation, special instructions and precautions. Apply Spartan DF/dry fertilizer mixtures with ground equipment only.

All individual state regulations relating to dry bulk fertilizer blending, registration, labeling, and application are the responsibility of the individual and /or company selling the Spartan DF/dry fertilizer mixture.

A minimum of 200 pounds of dry bulk fertilizer impregnated with the recommended amount of Spartan DF must be applied per acre.

DO NOT impregnate Spartan DF onto coated ammonium nitrate or limestone because these materials will not absorb the herbicide. Dry fertilizer blends containing mixtures of 200 pounds of impregnated dry bulk fertilizer, excluding the weight of ammonium nitrate or limestone, must be applied per acre.

Refer to the appropriate crop section of the Spartan DF label to determine the rate of Spartan DF to be applied per acre. Use the following table to determine the amount of Spartan DF to be impregnated on a ton(2000 pounds) of dry bulk fertilizer based on the rate of fertilizer which will be applied per acre.

For those rates not listed in the following table, calculate the amount of Spartan DF to be impregnated on a ton of dry bulk fertilizer using the following formula:

$$\frac{2000 \text{ pounds dry fertilizer per acre}}{\text{Spartan DF use rate in ounces}} \times \text{Spartan DF use rate in ounces} = \text{Ounces of Spartan DF to be applied per ton of fertilizer}$$

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RATE CHART FOR IMPREGNATION OF DRY BULK FERTILIZERS WITH SPARTAN DF HERBICIDE
(Ounces of Spartan DF per ton of Fertilizer)

Fertilizer Rate (lb/acre)	Spartan DF Rate Per Acre		
	5.3 oz/a	6.7 oz/a	8.0 oz/a
200	53	67	80
250	42.4	53.6	64
300	35.3	44.7	53.3
350	30.3	38.3	45.7
400	26.5	33.5	40
450	23.6	29.8	35.6

IMPREGNATION DIRECTIONS

To impregnate Spartan DF on dry bulk fertilizer, use a closed rotary-drum mixer or other commonly used dry bulk fertilizer blender equipped with suitable spray equipment.

Prepare a slurry of Spartan DF in a clean container using clear water. Slowly add the Spartan DF/water slurry to the impregnation spray tank and finish filling as needed with clear water. Spray nozzles must be placed to provide uniform coverage of Spartan DF onto the fertilizer during mixing.

Apply the Spartan DF dry bulk fertilizer with an accurately calibrated dry fertilizer spreader. The Spartan DF dry bulk fertilizer mixture must be spread uniformly on the soil surface. Uneven spreading can cause poor weed control and possible crop response.

REPLANTING INSTRUCTIONS

If initial planting of labeled crops fails to produce a stand, only labeled crops for Spartan DF or the tank mix partner, whichever is most restrictive, may be planted. Do not retreat field with Spartan DF Herbicide or Spartan DF 4F. Do not plant treated fields with any crop at intervals which are inconsistent with the Rotational Crop Guidelines on this label. When replanting use minimum soil tillage to preserve the herbicide barrier and achieve maximum weed control.

ROTATIONAL GUIDELINES

This table shows the minimum interval in months from the time of Spartan DF application until Spartan DF treated soil can be replanted to the crops listed. When Spartan DF is tank mixed with another herbicide, refer to the partner label for recropping instructions, following the directions that are most restrictive.

ROTATIONAL CROP GUIDELINE

Crop	Interval (Months)
Soybeans	Anytime
Tobacco	Anytime
Wheat, Barley, Rye, Oats, Triticale	4
Com. Field*	10
Rice	10
Sorghum	10**
Other Cereal Grains (Buckwheat; Millet, pearl; Millet, proso; Teosinte; Wild rice)	12
Alfalfa	12
Dry Edible Beans	12
Sunflowers	12
Sweet Potatoes	12
Peanuts	12
Cotton	18 ₁
Sweet Corn	18 ₁
Canola	24 ₁
Sugar Beets	24 ₁

*Field Corn includes only corn grown for grain or silage, popcorn and seed corn. **Sorghum - 18 month rotation for rates above 5.3 oz/acre

(1) Some crops have rotational intervals greater than 12 months after a Spartan DF application due to potential crop injury

WEEDS CONTROLLED

When used as directed, a preemergence soil applied treatment of Spartan DF will provide weed control as shown in the following tables.

CONTROL.....Rates weed control as 85% or greater
PARTIAL CONTROL.....Rates weed control as 71% to 84%
SUPPRESSION.....Rates weed control as 50% to 70%

CONTROL (85%+)	BROADLEAVES	PARTIAL CONTROL (71% to 84%)	SUPPRESSION (50% to 70%)
Amaranth, Palmer	Blackjack, common	Ballonvine	
Spiny	Buttercup, Smallflower	Beggarticks	
Selec ¹	Campion, white	Cocklebur, common	
Anoda, spured	Copperleaf, Virginia	Knolweed, prostrate	
Beggarweed, Florida	Fennel, dog	Marastai, common	
Carpetweed	Mallow, Venice	Morningglory, pitted	
Chickweed, common	Morningglory, blue	Pepperweed, Virginia	
Copperleaf, Hophornbeam	Mustard, wild	Pimpernel, scarlet	
Croton, tropic	Nightshade, American black	Sida, arrowhead	
Daisy, American	Oxtongue, bristly	Spurge, prostrate	
Dayflower, common	Radish, wild	Trumpetcreeper	
Virginia	Tansymustard		
Dock, curly	Texasweed		
Flixweed	Toadflax, yellow		
Galinsoga, hairy	Velvetleaf		
Groundcherry, clammy (seedling)	Vervain, prostrate		
Groundcherry, cutleaf			
Jimsonweed			
Kachia			
Ladysthumb			
Lambsquarters, common			
Lettuce, wild			
Mallow, common			
Milkweed, honeyvine			
Mexicanweed			
Morningglory:			
Entireleaf			
Ivyleaf			
Palmleaf			
Purple			
Red			
Scarlet			
Smallflower			
Tail			
Mustard			
Wid			
Tumble			
Nightshade:			
Black			
Eastern black			
hairy			
Silverleaf			
Pigweed			
Redroot			
Smooth			
Tumble			
Peanut			
blackseed			
Narrow-leaved			
Poorage			
Pomphylum			
Poinsettia, wild			
Puncturevine, common			
Purstain, common			
Pusley, Florida			
Rockpurslane, redmads			
Scoria, coffee			
Shepardspurs			
Sida:			
pink			
southern			
Sisymbrium			
Pennsylvania			
pink			
Smilax			
Smallflower			
Spotted			
American			
Spurge, spotted			
Stirrup, bristly			
Tasselflower, red			
Trotter, Russian			
Velvetleaf			
Waterhemp:			
Common			
Tall			
Waterpurslane, winged			

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GRASSES

CONTROL (85%+)	PARTIAL CONTROL (71% to 84%)	SUPPRESSION (50% to 70%)
Crabgrass Large Smooth Cupgrass, wooly Goosegrass Signalgrass, broadleaf Orchardgrass Panicum, fall Stinkgrass Witchgrass	Barnyardgrass, common Buckwheat, wild Crabgrass, Southern Crowfoot Cheat Foxtail: Bristly Giant Green Yellow Knotroot Robust Panicum, Texas Sandbur, field	Brome, Downy Johnsongrass(seedling) Junginca

SEDGES

CONTROL (85%+)	PARTIAL CONTROL (71% to 84%)	SUPPRESSION (50% to 70%)
Nutsedge, yellow annual	Nutsedge, purple	

Tank mixing with other grass soil applied herbicides such as Command 3ME, postemergence grass herbicides or mechanical cultivation will be required for grass management.

POST FALLOW OR PREPLANT BURNDOWN

Timing and Method of Application

Apply Spartan DF Herbicide alone or in combination with other herbicides in the post harvest/fallow period during late summer or early fall for residual control prior to planting or emergence of labeled crops to control or suppress broadleaf weeds. For all products used in tank mixes, refer to the specific product labels for all restrictions on tank mixing and observe all label precautions, instructions and rotational cropping restrictions. Apply in the early spring with burndown herbicides to provide residual control of soil germinating weeds in the spring. For all products used in tank mixes with Spartan DF, refer to the specific product labels for all restrictions on tank mixing, use rates and all other label precautions including rotational crop guidelines. Do not apply more than 8 ounces (0.375 pounds of active ingredient) per acre per season including fallow.

Fallow Systems

Apply Spartan DF at 2 to 5.3 ounces (0.094 to 0.25 pounds of active ingredient) per acre in post harvest/fallow systems for residual control of soil germinating weeds. Apply Spartan DF in the fall or early in the spring to insure adequate moisture for soil activation. Use labeled rates of burndown herbicides as tank mixtures with Spartan DF. Use recommended adjuvants for the herbicide tank mix partner. Do not use Spartan DF on coarse soils classified as sand which have less than 1% organic matter. Soil use rates are affected by soil type and organic matter.

Refer to the Spartan DF use Rates chart for specific information on the correct product use rates depending on the soil type, organic matter and soil pH.

PrePlant Burndown

Apply early in the Spring with suitable burndown herbicides to provide residual control of weeds germinating weeds in the spring. Apply uniformly with properly calibrated ground sprayers. Preplant applied burndown treatments should be made with a minimum of 20 gallons per acre to achieve adequate coverage of the weeds being treated. When making burndown applications to emerged weeds, the addition of adjuvants such as COC and MSO to the spray mixture will enhance the burndown activity of the application.

Refer to the Spartan DF use Rates chart for specific information on the correct product use rates depending on the soil type, organic matter and soil pH.

SOYBEANS

The herbicidal ingredient (sulfentrazone) in Spartan DF is especially effective against a wide range of economic broadleaf and grass weeds. The same processes that sulfentrazone affects in these weeds can, under certain conditions, be affected in soybeans. These conditions include high pH (7.5 and above), cold weather, prolonged and excessive moisture, seedling diseases, and any other condition, including poor agronomic practices, that are unfavorable to vigorous crop growth. Such effects in soybeans are often observed as stunting and discoloration. The duration of these effects are somewhat dependent on the duration of the adverse growing conditions. These effects lessen and generally diminish with the return to normal growing conditions.

Spartan DF will not cause adverse crop effects when applied strictly by the rate chart and use directions on this label under normal growing conditions.

Do not apply more than 8 oz of Spartan DF per season.

Application Instructions

Preplant Incorporated and Preemergence Applications:

Spartan DF can be applied from 45 days prior to planting up to 3 days after planting. When applications after planting are delayed, injury may occur if seeds are germinating. Spartan DF may be applied preemergence or preplant incorporated. For preplant incorporated applications, incorporation must be uniform and no deeper than 2". Improper soil incorporation may result in erratic weed control or crop injury. Spartan DF can also be applied during or after planting but before the crop emerges. Spartan DF applied close to or after crop emergence may cause severe injury to the crop. Spartan DF can be applied alone or in combination with other labeled soybean herbicides. Spartan DF may be followed by labeled postemergence soybean herbicides for increased control of grass and broadleaf weeds. Always follow the most restrictive label when tank mixing. When using Spartan DF in no-till or minimum till cropping systems tank mix with an appropriate burndown herbicide for improved control of existing weeds.

Fall Applications

Spartan DF may be applied as a fall treatment to crop stubble for the burndown of existing vegetation and preemergence control of labeled weeds the following spring in no-till and conservation tillage production systems. Fall applications of Spartan DF must be made in weed control programs that include, as needed, spring applications of preplant, preemergence or postemergence herbicides for the following crop season. Spartan DF can be applied to the stubble of a harvested crop in no-till or to the soil surface of conservation tillage fields after harvest when the sustained soil temperature is 55 degrees F and falling at a soil depth of 4 inches. Apply after September 30 in those areas North of Interstate 90 and after October 15 in those areas North of Interstate 70. Do not apply Spartan DF as a fall treatment South of Interstate 70. Apply uniformly with properly calibrated ground sprayers using a finished spray volume of 10 to 40 gallons per acre. Applications to ridge till production systems must be made after the formation of ridges.

If weeds are emerged at the time of application, utilize a tank mixture with a suitable burndown herbicide at labeled rates. Apply uniformly with properly calibrated ground sprayers. Fall applied burndown treatments should be made with a minimum of 20 gallons per acre to achieve adequate coverage of the weeds being treated. When making burndown applications to emerged weeds, the addition of adjuvants such as COC and MSO to the spray mixture will enhance the burndown activity of the application.

Refer to the Spartan DF Use Rates chart for specific information on the correct product use rates depending on the soil type, organic matter and soil pH.

DO NOT APPLY SPARTAN DF TO FROZEN SOIL

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TOBACCO

**For Use on Tobacco (Burley, Flue-Cured and Dark)
Do Not Use On Shade Grown Tobacco**

Spartan DF controls key broadleaf weeds and suppresses many annual grasses. Tank mixing with an herbicide partner such as Command 3ME or mechanical cultivation will be required for grass management.

APPLICATION INSTRUCTIONS

Spartan DF may be surface applied or preplant incorporated (to a depth no greater than 2 inches) from 12 hours to 14 days prior to transplanting tobacco. Incorporating Spartan DF deeper than 2 inches can result in inconsistent weed control. Broadcast apply the appropriate Spartan DF rate from the table above, in a minimum of 10 gallons per acre of water, to the soil prior to setting transplants.

Non-Bedded - Fields where raised beds are NOT formed prior to transplanting:

Perform all accepted cultural practices for land preparation, fertilizer/fungicide incorporation, etc. prior to the application of Spartan DF. Once the field has been prepared for planting, Spartan DF may be surface applied or lightly preplant incorporated from 12 hours to 14 days prior to transplanting.

If Spartan DF is surface applied and it is necessary to remove equipment tracks from the field after application but prior to transplanting, any light finishing equipment may be used providing the soil is not disturbed to a depth greater than 2 inches.

Bedded - Fields where raised beds ARE formed prior to transplanting:

Apply Spartan DF to formed beds as a surface application from 12 hours to 14 days prior to transplanting. If it is customary to drag/knock down beds prior to transplanting, this procedure must be performed prior to the Spartan DF application.

When incorporating prior to bedding, Spartan DF must be thoroughly and uniformly incorporated to a depth no greater than 2 inches to avoid concentrating Spartan DF in the bed. If initial transplanting fails to produce a uniform stand, tobacco may be replanted. DO NOT re-treat field with a second application of Spartan DF, and DO NOT re-bed. Re-transplant into previously formed, treated beds.

Spartan DF suppresses many other annual grasses. Tank mixing with an herbicide partner such as Command 3ME or mechanical cultivation will be required for grass management.

PRECAUTIONS

Do not apply Spartan DF to soils classified as sands containing less than 1% organic matter.

Do not use Spartan DF in Tobacco seeding beds or greenhouses. Do not apply Spartan DF post-transplant or unacceptable injury may occur.

Do not perform tillage practices that concentrate Spartan DF into the bed or crop injury may occur.

Poor agronomic practices, unfavorable pH soils, diseases, cold weather, excessive moisture, drought or other conditions unfavorable to normal plant growth may adversely affect the growth of tobacco transplants. Weakened transplants may be more susceptible to herbicide injury and diseases, particularly under poor drainage or compacted conditions or when the soil is saturated for long periods of time. Contact your State Agricultural Extension Service Specialist for consultation as to the agronomic recommendations suited for your tobacco varieties and local conditions. Temporary stunting of tobacco may occur if transplants are set too shallowly, or if heavy rainfall occurs immediately following transplanting. Splashing of treated soil onto tobacco leaves may cause some localized and inconsequential necrosis. Use sound transplanting practices that insure treated soil will not wash or crust over tobacco plants.

Thoroughly clean Spartan DF from application equipment immediately after use and prior to spraying other crops.

Dealers Should Sell in Original Packages Only.

Terms of Sale or Use: On purchase of this product buyer and user agree to the following conditions:

Warranty: FMC makes no warranty, expressed or implied, concerning the use of this product other than indicated on the label. Except as so warranted the product is sold as is. Buyer and user assume all risk of use and/or handling and/or storage of this material when such use and/or handling and/or storage is contrary to label instructions.

Directions and Recommendations: Follow directions carefully.

Timing and method of application, weather and crop conditions, mixture with other chemicals not specifically recommended and other influencing factors in the use of this product are beyond the control of the seller and are assumed by the buyer at his own risk.

Use of Product: FMC recommendations for the use of this product are based upon tests believed to be reliable. The use of this product being beyond the control of the manufacturer, no guarantee, expressed or implied is made as to the effects of such or the results to be obtained if not used in accordance with directions or established safe practice.

Damages: Buyer's or user's exclusive remedy for damages for breach of warranty or negligence shall be limited to direct damages not exceeding the purchase price paid and shall not include incidental or consequential damages.

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