

279-3334

(11-03-2009)

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

Callista O. Chukwunenye
FMC Corporation
1735 Market St.
Philadelphia, PA 19103

NOV 3 2009

Dear Dr. Chukwunenye:

SUBJECT: Master Label Amendment – Adding Tobacco
Spartan Advance Herbicide
EPA Registration No. 279-3334

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

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

Enclosure



SPARTAN[®]

ADVANCE

HERBICIDE

ACCEPTED

NOV 3 2009

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

279-3334

For Use Only by Individuals/Firms Certified As Licensed Pesticide Applicators

EPA Reg. No. 279-3334	EPA Est.
Active Ingredient: (1)	By Wt.
Sulfentrazone*	5.70%
Glyphosate IPA**	41.48%
Other Ingredients:	52.82%
Total:	100.0%

*SPARTAN ADVANCE Herbicide contains 0.56 pounds per US gallon of the active ingredient Sulfentrazone.

** SPARTAN ADVANCE contains 4.04 pounds per US gallon of the active ingredient Glyphosate, in the form of Isopropylamine salt, (3.00 pounds per gallon of glyphosate acid).

Contains Petroleum Distillates
U.S. Patent Pending

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

FIRST AID (2)

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.

HOTLINE NUMBER (3)

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-331-3148 for emergency medical treatment information.

**THE ACTIVE INGREDIENT SULFENTRAZONE IS MADE IN CHINA.
THE ACTIVE INGREDIENT GLYPHOSATE IS MADE IN USA.
SPARTAN ADVANCE IS FORMULATED AND PACKAGED IN USA.**

FROM **FMC**

ATTENTION (4)

Although this label may appear similar to the label on a product you may have used, there may be important label differences. Users must read, understand and strictly follow all label directions, precautions and restrictions.

It is the user's responsibility to be sure the product is approved for sale or use on the intended crop and for use in the specific geographic area.

It is the user's responsibility to be aware of and to follow all State or local precautions or restrictions not appearing on this product label.

Prior to purchase or use of this product, read the Conditions of Sale and Limitation of Warranty and Liability on page 2 of this label. If the terms and conditions are unacceptable, return the product immediately in the original and unopened container.

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PRECAUTIONARY STATEMENTS (5)

Hazards to Humans and Domestic Animals Caution

Causes moderate eye irritation. Wear protective eyewear. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. 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) (6)

Applicators and other handlers must wear: long-sleeved shirt and long pants, chemical resistant gloves made of waterproof material such as polyethylene or polyvinyl chloride, 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:

Wash hands before using the toilet.

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

Remove PPE immediately after handling the product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Environmental Hazards (7)

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 wash waters 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

This product can contaminate surface water through spray drift. Under some conditions, this product 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 overlying tile drainage systems that drain to surface waters.

Physical/Chemical Hazards (8)

Combustible. Do not use or store near heat or open flame.

AGRICULTURAL USE REQUIREMENTS (9)

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. (10)

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, chemical resistant gloves, and shoes plus socks.

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY (11)

Notice: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product.

If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions beyond the control of FMC or Seller. All such

risks shall be assumed by Buyer and User, and, to the extent permitted by applicable law, Buyer and User agree to hold FMC and Seller harmless for any claims relating to such factors.

Seller warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the Directions for Use when used in accordance with the directions under normal conditions of use. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, FMC MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, NOR ANY OTHER EXPRESS OR IMPLIED WARRANTIES WITH RESPECT TO THE SELECTION, PURCHASE, OR USE OF THIS PRODUCT. Any warranties, express or implied, having been made are inapplicable if this product has been used contrary to label instructions, or under abnormal conditions, or under conditions not reasonably foreseeable to (or beyond the control of) seller or FMC, and, to the extent consistent with applicable law, buyer assumes the risk of any such use.

To the extent consistent with applicable law, FMC or seller shall not be liable for any incidental, consequential or special damages resulting from the use or handling of this product. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF FMC AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF FMC OR SELLER, THE REPLACEMENT OF THE PRODUCT.

This Conditions of Sale and Limitation of Warranty and Liability may not be amended by any oral or written agreement.

Storage and Disposal (12)

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.

Do not store below 32°F degrees.

In Case of Spill

Avoid contact. Isolate areas and keep out animals and unprotected persons.

To Confine Spills.

Dike surrounding area, sweep up spillage, Dispose of in accordance with information given under Pesticide Disposal. Wash spill area with water, absorb with sand, cat litter or commercial clay, sweep up and dispose of in an approved manner. Place damaged container in a large holding container. Identify contents per required hazardous waste labeling regulations.

Pesticide Disposal

Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative of the nearest EPA Regional Office for guidance.

Container Disposal

Metal or Plastic Containers - Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: **(For containers greater than 5 gallons)** Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **(For containers 5 gallons or less)** Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available, or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities. Do not cut or weld metal containers.

Returnable/Refillable Containers - Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents into application equipment or mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

RESISTANCE MANAGEMENT (13)

Some weeds are known to develop resistance to herbicides that have been used repeatedly. While the development of resistance is well understood, it is not easily predicted. Therefore herbicides should be used in conjunction with resistance management strategies in the area. Consult the local or State agricultural advisors for details. If weed resistance should develop in the area, this product used alone may not continue to provide sufficient levels of weed control. If the reduced levels of control can not be attributed to improper application timing, unfavorable weather conditions or abnormally high weed pressure, a resistant strain may have developed.

To reduce the potential for weed resistance, use this product in a rotation program with other classes of chemistry and modes of action. Always apply this product at the recommended rates and in accordance with the use directions. Do not use less than recommended label rates alone or in tank mixtures. Do not use reduced rates of the tank mix partner. For optimum performance, scout fields carefully and begin applications when weeds are smaller rather than larger. If resistance is suspected, contact the local or State agricultural advisors.

DIRECTIONS FOR USE (14)

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

Read all Directions for Use carefully before applying.

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.

GENERAL INFORMATION (15)

SPARTAN ADVANCE is an herbicide that may be applied before or after weed emergence for control of many broadleaf and grassy weeds. Annual weeds are easiest to control when they are small. For most perennial weeds, applications at late growth stages result in better performance. Always use the higher recommended rate of this product, for the appropriate soil texture and organic matter, when weed growth is dense or heavy, or weeds are growing in an undisturbed or non-cultivated area. Reduced weed control may occur if weeds are experiencing drought stress, disease or insect damage, or when weeds are thickly covered with dust.

SPARTAN ADVANCE is a soluble concentrate herbicide with systemic and soil residual activity. SPARTAN ADVANCE is to be mixed with water, liquid fertilizer, or mixtures of water and liquid fertilizer for preemergence weed control in labeled crops. Spartan Advance also contains the herbicide glyphosate which will kill non-tolerant crops if applied after crop emergence. This herbicide is designed to provide both burndown control of emerged weeds and residual control of weeds prior to planting or crop emergence.

SPARTAN ADVANCE is a dual mode of action herbicide and involves uptake by weed roots and shoots. Sulfentrazone, one of the active ingredients in SPARTAN ADVANCE, is a potent inhibitor of the enzyme Protoporphyrinogen Oxidase IX (PPO IX) required for the formation of chlorophyll. Glyphosate, the second active ingredient in SPARTAN ADVANCE, inhibits an enzyme found only in plants and microorganisms that is required for amino acid formation. Soil applications of SPARTAN ADVANCE must be made before crop seed germination to prevent injury to the emerging crop seedlings. SPARTAN ADVANCE applied after crop emergence will cause severe injury to the crop. Refer to the specific directions of use for a particular crop/use pattern as set forth below for additional information.

SPARTAN ADVANCE herbicide exhibits excellent crop safety. Poor growing conditions, such as excessive moisture, cool temperatures, and soil compaction or the presence of various pathogens may impact seedling vigor. Under these conditions, the active ingredients in SPARTAN ADVANCE can contribute to crop response.

If adequate moisture (1/2" to 1" of rainfall or irrigation) is not received within 7 to 10 days, erratic preemergent weed control may result. Erratic preemergent weed control may also occur if dry conditions persist throughout the growing season. Additional moisture is needed throughout the growing season to maintain herbicide activity and prevent weed escapes.

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 ADVANCE. In addition to general application information, refer to the specific directions of use for a particular crop/use pattern as set forth below.

Proper Handling Instructions

This product 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

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designed and maintained to contain any product spills or equipment leaks, container or equipment rinse or wash water, 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.

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

Do not use flood irrigation to apply or incorporate this product.

This product must be used in a manner which will prevent back siphoning into wells, spills or improper disposal of excess pesticide, spray mixtures or rinsates.

RATE CONVERSION CHART (16)

SPARTAN ADVANCE		SULFENTRAZONE	GLYPHOSATE
Product oz/A	Total lb ai	lb ai*	lb ai**
21	0.58	0.09	0.49
26	0.72	0.11	0.61
32	0.89	0.14	0.75

* Based on Spartan 4F formulation

** Based on Glyphosate 3.0 lb ae formulation

SOIL CLASSIFICATION CHART (17)

COARSE	MEDIUM	FINE
Sand Loamy sand Sandy loam	Sandy clay loam Sandy clay Loam Silt loam Silt	Silty clay loam Silty clay Clay loam Clay

CROP ROTATIONAL INTERVALS (18)

Shown below are the minimum intervals in months from the time of SPARTAN ADVANCE application until SPARTAN ADVANCE treated soil may be replanted with the crops listed. When SPARTAN ADVANCE is tank mixed with other herbicide(s), refer to all those labels for re-cropping instructions, following the intervals that are the most restrictive. For crops not listed, the interval is 12 months in addition to a successful field bioassay.

The field bioassay is a test strip of the intended crop planted across the previously treated field and grown to maturity. The test strip should include low spots, knolls, and variable pH and soil types. If crop responses are not observed, the crop may be planted the following year.

CROP ROTATION INTERVALS*

CROP	INTERVAL (Months)
Alfalfa	12
Barley	4
Cabbage (transplant only)	Anytime
Canola, Crambe	24
Chickpeas	Anytime
Corn, field	Anytime
Corn, pop	Anytime
Corn, seed	Anytime
Corn, sweet	4
Cotton	18
Dry Shell Peas & Beans	Anytime
Horseradish	Anytime
Lima Beans	Anytime
Mint	Anytime
Peanuts	Anytime
Potatoes	Anytime
Rice	10
Rye	4
Sorghum	10*
Soybeans	Anytime
Sugar Beets	36
Sugarcane	Anytime
Sunflowers	Anytime
Sweet Potatoes	12
Tobacco	Anytime
Triticale	4
Turf	Anytime
Wheat	4

* 18 month rotation for rates above 57.6 fluid ounces per acre

** For all other crops not listed, the rotation interval is a minimum of 12 months.

REPLANTING INSTRUCTIONS (19)

If the initial planting of labeled crops fails to produce a uniform stand, only labeled crops for SPARTAN ADVANCE or the tank mix partner; whichever is most restrictive, may be replanted. Do not retreat fields with a second application of SPARTAN ADVANCE or other herbicide containing sulfentrazone. When tank mixing with a labeled product, refer to the replant instructions for that product. Do not replant treated fields with any crop at intervals that are inconsistent with the CROP ROTATION INTERVALS on this label. When replanting use minimum soil tillage to preserve the herbicide barrier and achieve maximum weed control.

APPLICATION INFORMATION (20)

Ground Application

Use a conventional low pressure herbicide boom sprayer equipped with suitable nozzles and screens. Apply uniformly using properly calibrated nozzles and screens and strainers no finer than 50 mesh. Use 10 to 40 gallons of spray solution per acre. Do not exceed 40 psi spray pressure unless required by the spray nozzle manufacturer.

Water or clear liquid fertilizer solutions (28–32% nitrogen only) may be used as the carrier for SPARTAN ADVANCE when applied alone or in tank mixtures with other registered herbicides. A jar test is recommended to determine the compatibility of SPARTAN ADVANCE and the fertilizer solution.

A nonionic surfactant (NIS) or a wetting agent labeled for use with herbicides is required for SPARTAN ADVANCE applications. Add surfactant at 2 quarts per 100 gallons of spray solution. The surfactant must contain at least 70% active ingredient. Read and follow all applicable use directions, precautions and restrictions on the surfactant label.

When an adjuvant is to be used with this product, FMC recommends use of a Chemical Producers and Distributors Association certified adjuvant.

Continuous agitation is required until all spray mixture has been applied. Avoid swath overlaps. Shut off spray booms while turning, slowing or stopping, as over application may result. Do not allow SPARTAN ADVANCE spray mixtures to sit overnight as settling of product and difficulty of re-suspending may occur.

To avoid injury to sensitive crops, spray equipment used for SPARTAN ADVANCE applications must be drained and thoroughly cleaned with water plus ammonia before being used to apply other products. See Spray Clean-out Section 21 on page 6.

Avoid all direct, and/or indirect spray contact with non-target plants. Do not apply near desirable vegetation. Allow adequate distance between target area and desirable plants to minimize exposure.

Aerial Application

SPARTAN ADVANCE may be applied by air using properly calibrated nozzle types and arrangements that will provide optimum coverage while producing minimal amounts of fine droplets. Apply sufficient spray volume to achieve adequate coverage. Apply a minimum of five (5) gallons of finished spray per acre. Do not apply when wind speed favors drift beyond the area intended for treatment.

RUNOFF AND WIND EROSION PRECAUTIONS

Do not apply under conditions which favor runoff or wind erosion of soil containing SPARTAN ADVANCE to non-target areas.

To prevent off-site movement due to runoff or wind erosion:

- Avoid treating powdery dry or light sandy soils when conditions are favorable for wind erosion. Under these conditions, allow the soil surface to be settled by rainfall or irrigation.
- Do not apply to impervious substrates such as paved or highly compacted surfaces or frozen or snow covered ground.
- Do not apply to soils when saturated with water.
- Do not use tail water from the first flood or furrow irrigation of treated fields to treat non target crops unless at least 1/2 inch of rainfall has occurred between application and the first irrigation.

SPRAY DRIFT REDUCTION ADVISORY (21)

AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR AND THE GROWER.

The interaction of many equipment and weather related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target movement from applications to agricultural field crops.

Where States and local governments have more stringent regulations, they must be observed.

Droplet Size Information

Reduce drift potential by applying large droplets. The optimum drift management strategy is to apply the largest droplets that will provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift when applications are made improperly, or under unfavorable environmental conditions (See Wind, Temperature and Humidity and Temperature Inversions).

VMD – VMD is the expression of the droplet size of the spray cloud. The VMD value means that 50% of the droplets are larger than the expressed value and 50% of the droplets are smaller than the expressed value. Optimum spray clouds should be 450 microns with fewer than 10% of the droplets being 200 microns or smaller.

Volume – Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows usually produce larger droplets.

Pressure – Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.

Number of Nozzles – Use the minimum number of nozzles that provide uniform coverage.

Nozzle Type – Use a nozzle type that is designed for the intended application. With most nozzle types narrower spray angles produce larger droplets. Consider using low drift nozzles.

Application Height – Making applications at the lowest height practical reduces exposure of spray droplets to evaporation and wind movement.

Swath Adjustment – Swath adjustment distance must increase with increasing drift potential (higher wind, smaller droplets, etc.)

Wind – Drift potentials are lowest between wind speeds of 3 to 10 miles per hour. However, many factors, including droplet size and equipment type determine drift potential at any given wind speed. Applications in wind conditions outside of this range could increase the risk of off-target effects and should be avoided. Note that local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity – When making applications in conditions of low relative humidity set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions – Do not apply SPARTAN ADVANCE during temperature inversions because the drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the following morning. Their presence can be indicated by ground fog. However, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or a smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

Sensitive Areas – Applications should be made when the wind is blowing away from adjacent sensitive areas (e.g. residential areas, bodies of water, known habitats for threatened or endangered species and non-target crops).

BAND TREATMENT APPLICATIONS (22)

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

$$\frac{\text{Band Width In Inches}}{\text{Row Width In Inches}} \times \text{Broadcast Rate Per Acre} = \text{Band Rate}$$

$$\frac{\text{Band Width In Inches}}{\text{Row Width In Inches}} \times \text{Broadcast Volume Per Acre} = \text{Band Volume}$$

MIXING AND LOADING INSTRUCTIONS (23)

SPARTAN ADVANCE Applied Alone

Select the proper SPARTAN ADVANCE application rate from the following tables in the crop section of this label. Fill the spray tank with approximately one-half of the volume of water needed for the acreage being treated. With agitator operating, add the required amount of SPARTAN ADVANCE for acreage being treated by opening the bottle(s) and measuring directly into the spray tank. Allow the product to fully disperse. Complete the addition of spray water. Maintain agitation during filling, mixing and application. Apply the SPARTAN ADVANCE spray mixture immediately after mixing.

Do not store spray mixture.

Do not prepare spray mixtures in nurse tanks.

SPARTAN ADVANCE Applied in Tank Mix Combination

Select the proper SPARTAN ADVANCE application rate from TIMING AND METHOD OF APPLICATION section of label. Read and follow all applicable use directions, precautions and restrictions on the respective tank mix product labels. To ensure product compatibility, a jar test should be conducted before large volume mixing. Provided the jar test indicates the mixture is compatible, prepare the tank mixture as follows.

Fill the spray tank with approximately one-half of the volume of water needed for the acreage being treated. With agitator operating, add the required amount of SPARTAN ADVANCE for the acreage being treated by opening the bottle(s) and measuring directly into the spray tank. Allow the product to fully disperse. Next, add the recommended amount(s) of the additional tank mix product(s) in the following order: first dry formulations (e.g., wettable powders, dry flowables), next liquid suspensions (e.g., flowables) and finally liquids (e.g., EC's). Allow time for complete

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mixing and dispersion after each addition, adding water as necessary. Complete the addition of spray water. Maintain agitation during filling, mixing and application. Use SPARTAN ADVANCE tank mixtures immediately after mixing.

Do not store tank mixtures.

Do not prepare spray mixtures in nurse tanks.

SPARTAN ADVANCE Applied Alone with Liquid Fertilizer

When adding SPARTAN ADVANCE to a liquid fertilizer carrier, SPARTAN ADVANCE should be premixed in clear water.

Fill the spray tank one-half full with fertilizer solution. With agitator operating, add the SPARTAN ADVANCE slurry to the spray tank. Use a minimum of one gallon of water for each container of SPARTAN ADVANCE. Stir until completely dissolved. Then add slurry to the spray tank through a 20-35 mesh screen. Rinse container used for pre-mixing and add rinseate to the spray tank. Complete filling the sprayer tank with fertilizer. Maintain agitation during filling, mixing and application. Use SPARTAN ADVANCE spray mixture immediately after mixing.

Do not store mixture.

Do not prepare spray mixtures in nurse tanks.

Fertilizer Spray Mixtures

Applications of SPARTAN ADVANCE alone, or with recommended tank mixtures, in conjunction with clear liquid fertilizer solutions (28-32% nitrogen only) may be used unless use directions specifically state otherwise. Small quantities should be tested for compatibility by the following procedure before mixing in full spray tank quantities.

- 1) Add 1 pint of fertilizer solution in a quart jar.
- 2) Add the appropriate amount of herbicide based on the MIXTURE COMPATIBILITY table below. If more than one product is to be used, add each separately using the following sequence: dry formulations (e.g., wettable powders, dry flowables) first, liquid suspensions (e.g., flowables) next and finally liquids (e.g., EC's).
- 3) Close jar and shake well.
- 4) Watch mixture for several seconds, again after 5 minutes and again after 30 minutes. If herbicide/fertilizer combination remains mixed or can be remixed readily (i.e., does not permanently separate, foam, gel or become lumpy), the mixture is compatible and can be mixed in full volumes and sprayed. If the mixture is compatible, prepare spray by adding fertilizer solution to the tank first, and then follow directions noted below.

MIXTURE COMPATIBILITY TESTING

Herbicide Type	Herbicide Field Use Rate	Amount Herbicide Added Per Pint
Wettable Powder or Dry Flowable	0.5 pound	0.75 teaspoon
	1.0 pound	1.50 teaspoons
	2.0 pounds	3.00 teaspoons
	3.0 pounds	4.50 teaspoons
Emulsified Concentrates Liquid Flowables	1.0 pint	0.5 teaspoon
	1.0 quart	1.0 teaspoon
	2.0 quarts	2.0 teaspoons
	3.0 quarts	3.0 teaspoons

*Based on a spray volume of 25 gallons per acre. For lower or higher spray volumes, adjust fluid fertilizer quantity accordingly.

Adjuvants

A nonionic surfactant (NIS) or a wetting agent labeled for use with herbicides is required for SPARTAN ADVANCE applications. Add surfactant at 2 quarts per 100 gallons of spray solution. The surfactant must contain at least 70% active ingredient. Read and follow all applicable use directions, precautions and restrictions on the surfactant label.

Ammonium Sulfate

Where hard water conditions exist, the addition of 8 to 16 pounds of dry ammonium sulfate per 100 gallons of water (or the equivalent of ammonium sulfate in a liquid formulation or high quality water conditioner) may improve the performance of this product. Thoroughly dissolve the dry ammonium sulfate in the spray tank before adding herbicides or surfactants. After use, completely rinse the spray system with clean water to reduce corrosion.

Drift Reduction Agents

Drift reduction agents may be used, especially near sensitive vegetation. Drift reduction agents can affect the spray pattern, causing reduced performance if adequate coverage is not obtained. Check your local county or state regulations that may require the use of a drift reduction agent.

SPRAY EQUIPMENT CLEAN-OUT (24)

After spraying SPARTAN ADVANCE 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. 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 ca-

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capacity and operate the sprayer for 15 minutes to flush hoses, boom, and nozzles.

3. Convenient and thorough cleaning of the sprayer can be achieved if the cleaning solution is left in the spray tank, hoses, spray booms and spray nozzles overnight or during storage.

4. Before using the sprayer, drain the spray system. Rinse the tank with clean water and flush through the hoses, boom, and nozzles. Remove and clean spray tips and screens separately with the detergent or ammonia solution.

5. Properly dispose of all cleaning solution and rinsate in accordance with Federal, State and local regulations and guidelines.

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.

Should small quantities of SPARTAN ADVANCE remain in inadequately cleaned mixing, loading and/or spray equipment, they may be released during subsequent applications potentially causing effects to certain crops and other vegetation. FMC accepts no liability for any effects due to inadequately cleaned equipment.

MAXIMUM ALLOWABLE SPARTAN ADVANCE USE PER ACRE PER 12 MONTH PERIOD* (25)

Refer to the crop section of this label for specific product use directions.

Crop	Ounces SPARTAN ADVANCE Per Acre	Pounds Active SPARTAN ADVANCE** Per Acre
Row Crops		
Corn	86.4	3.08
Fallow	57.6	2.07
Peanut	64.8	1.38
Potato	57.6	1.15
Soybeans	85.7	3.08
Sugarcane	85.7	3.08
Sunflowers	57.6	2.07
Vegetable Crops		
Cabbage	85.7	3.08
Dry Beans & Peas	57.6	2.07
Horseradish	57.6	2.07
Lima Beans (Succulent)	43.0	1.55
Oil Crops		
Mint	85.7	3.08

*The total allowed usage per twelve-month period includes all applications made to the field per twelve-month interval. This includes fallow treatments, burndown treatments, planting time and all in-season treatments. The twelve-month period is considered to begin upon the initial SPARTAN ADVANCE application.

** Based on total active sulfentrazone and glyphosate IPA

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Weeds Controlled Pre-Plant Burndown(26)
General Preemergent Weeds Controlled (Refer to individual crop sections for pre-emergent weeds controlled)

BROADLEAVES

Common Name	Scientific Name
Amaranth, Palmer	<i>Amaranthus palmeri</i>
Amaranth, spiny	<i>Amaranthus, spinosus</i>
Amaranth, spleen	<i>Amaranthus dubius</i>
Jimsonweed	<i>Datura stramonium</i>
Kochia	<i>Kochia scoparia</i>
Lambsquarters, common	<i>Chenopodium album</i>
Morningglory, Entireleaf	<i>Ipomea hederacea integrilusc</i>
Morningglory, Ivyleaf	<i>Ipomea hederacea hederacea</i>
Morningglory, Palmleaf	<i>Ipomea Wrightii</i>
Morningglory, pitted	<i>Ipomea lacunosa</i>
Morningglory, purple	<i>Ipomea turbinata</i>
Morningglory, red	<i>Ipomea coccinea</i>
Morningglory, scarlet	<i>Ipomea hederifolia</i>
Morningglory, smallflower	<i>Jacquemontia tamnifolia</i>
Morningglory, tall	<i>Ipomea, purpurea</i>
Nightshade, black	<i>Solanum nigrum</i>
Nightshade, Eastern black	<i>Solanum americanum</i>
Pigweed, redroot	<i>Amaranthus retroflexus</i>
Pigweed, smooth	<i>Amaranthus hybridus</i>
Prickly Sida, Teaweed	<i>Sida spinosa</i>
Smartweed, Pennsylvania	<i>Polygonum pennsylvanicum</i>
Thistle, Russian	<i>Lactuca scariola</i>
Waterhemp, common	<i>Amaranthus rudis</i>
Waterhemp, tall	<i>Amaranthus tuberculatos</i>
SEDGES	
Nutsedge, purple	<i>Cyperus rotundus</i>
Nutsedge, yellow	<i>Cyperus esculentus</i>
Sedge, annual	<i>Cares spp.</i>

General Postemergent Weeds Controlled

BROADLEAVES

Common Name	Scientific Name
Amaranth, livid	<i>Amaranthus lividus</i>
Amaranth, Palmer*	<i>Amaranthus palmeri</i>
Amaranth, Powell	<i>Amaranthus powellii</i>
Amaranth, spiny	<i>Amaranthus, spinosus</i>
Amaranth, spleen	<i>Amaranthus dubius</i>
Ammania, purple	<i>Ammania coccinea</i>
Anoda, spurred	<i>Anoda cristata</i>
Bassia, fivehook	<i>Bassia hyssopifolia</i>
Beggarweed, Florida	<i>Desmodium tortuosum</i>
Bittercress	<i>Cardamine hirsuta</i>
Burcucumber	<i>Sicyos angulatus</i>
Buttercup	<i>Ranunculus spp.</i>
Carolina geranium	<i>Geranium carolinianum</i>
Carpetweed	<i>Mullugo verticillata</i>
Catchweed Bedstraw	<i>Galium aparine</i>
Chervil	<i>Anthriscus cerefolium</i>
Chickweed, Common	<i>Stellaria media</i>
Cocklebur, common	<i>Xanthium strumarium</i>
Copperleaf, Hophornbeam	<i>Acalypha ostryeafolia</i>
Copperleaf, Virginia	<i>Acalypha virginica</i>
Coreopsis, plains	<i>Coreopsis tinctoria</i>
Corn speedwell	<i>Veronica arvensis</i>
Corn, volunteer	<i>Zea mize</i>
Cotton, volunteer	<i>Gossypium hirsutum</i>
Croton, tropic	<i>Croton glandulosus</i>
Outleaf evening primrose	<i>Oenothera laciniata</i>
Dwarf dandelion	<i>Krigia dandelion</i>
Eclipta	<i>Eclipta prostrata</i>
Falseflax, smallseed	<i>Camelina microcarpa</i>
Fiddleneck	<i>Amsinckia menziesii</i>
Field pennycress	<i>Thlaspi arvense</i>
Fleabane, hairy	<i>Coryza bonariensis</i>
Fleabane, annual	<i>Erigeron annuus</i>
Fleabane, rough	<i>Erigeron strigosus</i>
Flixweed	<i>Descurainia sophia</i>
Galinsoga, hairy	<i>Galinsoga ciliata</i>
Golden crownbeard	<i>Verbesina encelloides</i>
Groundcherry, clammy (seedling)	<i>Physalis heterophylla</i>
Groundcherry, cutleaf	<i>Physalis angulata</i>
Groundsel, common	<i>Senecio vulgaris</i>

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General Postemergent Weeds Controlled (Cont'd)

BROADLEAVES

Common Name	Scientific Name
Hemp sesbania	<i>Sesbania exaltata</i>
Henbit	<i>Lamium amplexicaule</i>
Jimsonweed	<i>Datura stramonium</i>
Knotweed, prostrate	<i>Polygonum aviculare</i>
Ladythumb	<i>Polygonum persicaria</i>
Lambsquarters, common*	<i>Chenopodium album</i>
London rocket	<i>Sisymbrium irio</i>
Mallow, common	<i>Malva neglecta</i>
Mayweed	<i>Anthemis cotula</i>
Morningglory, Entireleaf	<i>Ipomea hederacea integrisc</i>
Morningglory, Ivyleaf	<i>Ipomea hederacea hederacea</i>
Morningglory, Palmleaf	<i>Ipomea Wightii</i>
Morningglory, pitted	<i>Ipomea laciniosa</i>
Morningglory, purple	<i>Ipomea turbinata</i>
Morningglory, red	<i>Ipomea coccinea</i>
Morningglory, scarlet	<i>Ipomea hederifolia</i>
Morningglory, smallflower	<i>Jacquemontia tamnifolia</i>
Morningglory, tall	<i>Ipomea, purpurea</i>
Mustard, black	<i>Brassica nigra</i>
Mustard, blue	<i>Chorispora tenella</i>
Mustard, tansy	<i>Descurainia pinnata</i>
Mustard, tumble	<i>Sisymbrium altissimum</i>
Mustard, wild	<i>Brassica kaber</i>
Nightshade, black	<i>Solanum nigrum</i>
Nightshade, Eastern black	<i>Solanum americanum</i>
Nightshade, hairy	<i>Solanum sarrachoides</i>
Pigweed, redroot	<i>Amaranthus retroflexus</i>
Pigweed, smooth	<i>Amaranthus hybridus</i>
Purslane, common	<i>Portulaca oleracea</i>
Pusley, Florida	<i>Richardia scabra</i>
Ragweed, common*	<i>Ambrosia artemisiifolia</i>
Ragweed, giant*	<i>Ambrosia trifida</i>
Red rice	<i>Oryza punctata</i>
Redmaids	<i>Calandrinia caulescens</i>
Redstem Filaree	<i>Erodium cicutarium</i>
Shepherdspurse	<i>Capsella bursa pastoris</i>
Sicklepod	<i>Senna obtusifolia</i>
Sida, prickly (Teaweed)	<i>Sida spinosa</i>
Smartweed, PA	<i>Polygonum pennsylvanicum</i>
Sowthistle, annual	<i>Sonchus asper</i>
Spanishneedles	<i>Bidens bipinnata</i>
Speedwell, purslane	<i>Veronica peregrina</i>
Spurge, prostrate	<i>Euphorbia humistrata</i>
Spurge, spotted	<i>Euphorbia maculata</i>
Spurry, umbrella	<i>Holosteum umbellatum</i>
Sunflower, wild, volunteer	<i>Helianthus annuus</i>
Swinecress	<i>Coronopus didymus</i>
Velvetleaf	<i>Abutilon theophrasti</i>
Virginia pepperweed	<i>Lepidium virginicum</i>
Waterhemp, common*	<i>Amaranthus rudis</i>
Waterhemp, tall*	<i>Amaranthus tuberculatos</i>
Yellow rocket	<i>Barbarea vulgaris</i>
GRASSES	
Barley	<i>Hordeum vulgare</i>
Barnyardgrass	<i>Echinochloa crus-galli</i>
Cheat	<i>Bromus secalinus</i>
Crabgrass, large	<i>Digitaria sanguinalis</i>
Crabgrass, smooth	<i>Digitaria ischaemum</i>
Crabgrass, Southern	<i>Digitaria ciliaris</i>
Crowfootgrass	<i>Dactyloctenium aegypticum</i>
Cupgrass, woolly	<i>Erichloa villosa</i>
Fall panicum	<i>Panicum dichotomiflorum</i>
Foxtail, giant	<i>Setaria faberi</i>
Foxtail, bristly	<i>Setaria verticillata</i>
Foxtail, Carolina	<i>Alopecurus carolinianus</i>
Foxtail, green	<i>Setaria viridis</i>
Foxtail, yellow	<i>Setaria lutescens</i>
Goatgrass, jointed	<i>Aegilops cylindrica</i>
Goosegrass	<i>Eleusine indica</i>
Grain sorghum (milo)	<i>Sorghum bicolor</i>
Itchgrass	<i>Rottboellia cochinchinensis</i>
Johnsongrass, seedling	<i>Sorghum halapense</i>

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General Postemergent Weeds Controlled (Cont'd)

GRASSES

Common Name	Scientific Name
Junglerice	<i>Echinochloa colona</i>
Oats	<i>Avena sativa</i>
Rye	<i>Secale cereale</i>
Ryegrass*	<i>Lolium multiflorum</i>
Sandbur, field	<i>Cenchrus spinifex</i>
Sandbur, longspine	<i>Cenchrus longispinus</i>
Shattercane	<i>Sorghum bicolor</i>
Signalgrass, broadleaf	<i>Brachiaria platyphylla</i>
Sprangletop	<i>Leptochloa fusca</i>
Stinkgrass	<i>Eragrostis ciliaris</i>
Texas panicum	<i>Panicum texanum</i>
Wheat, volunteer	<i>Triticum aestivum</i>
Wild oats	<i>Avena fatua</i>
Wild proso millet	<i>Panicum miliaceum</i>
Witchgrass	<i>Panicum capillare</i>

Note: Repeated use of the same herbicide or herbicide class can lead to increased levels of weed tolerance or resistance to those herbicides. Some weeds in the list above may exhibit reduced levels of control due to repeated applications of glyphosate in the past. See resistance management statement on page 3 for further information.

*Glyphosate resistant weeds will not be controlled postemergence with this product.

**For improved postemergence control of difficult to control weeds, such as Kochia, ragweeds, Russian Thistle, and Pigweeds (including Tall Waterhemp), additional glyphosate and/or Aim EC will be necessary.

FIELD CORN AND SEED FIELD CORN(27)

Table 1

SPARTAN ADVANCE Use Rate Table (Corn) Fall, Spring Early Preplant and Preemergence Applications			
Broadcast Rate	Fluid Ounces SPARTAN ADVANCE per acre*		
	Soil Texture		
% Organic Matter	Coarse	Medium	Fine
<1.5	21.0 - 32.0	21.0 - 32.0	26.0 - 35.0
1.5-3.0	21.0 - 32.0	26.0 - 43.0	32.0 - 46.0
>3	26.0 - 43.0	32.0 - 46.0	43.0 - 57.0

Refer to the previous information on soil types under the COARSE, MEDIUM, and FINE categories
Use higher rates for soils of pH less than 7.0 and lowest rate for pH greater than 7.0 within the rate range.

* When use rates of Spartan Advance are less than 32 oz, additional glyphosate will be required for effective control of emerged weeds.

Preplant Fall Applications

SPARTAN ADVANCE may be applied in the fall as a preplant treatment prior to corn planting the following spring. SPARTAN ADVANCE can be used alone or in a tank mixture with other herbicides to control susceptible broadleaves, sedges and grasses in corn. Apply SPARTAN ADVANCE in conventional tillage or conservation tillage (reduced tillage or no-tillage) cropping systems using rates recommended in Table 1. SPARTAN ADVANCE should be applied to the stubble or soil surface and allow moisture from rainfall or snow to move the product into the soil. Do not mechanically incorporate in the fall or spring as this operation can destroy the herbicide barrier allowing weed escapes to occur. Do not apply to frozen soils or existing snow cover to prevent SPARTAN ADVANCE runoff from rain or snowmelt that may occur following application. SPARTAN ADVANCE may be tank mixed with other burndown herbicides to control emerged weeds in the fall or residual soil herbicides that are labeled for fall use on corn. Select the correct SPARTAN ADVANCE use rate for corn from the Table 1 for your soil type and organic matter. Due to the extended period of time between the fall application and corn planting, the use rate of SPARTAN ADVANCE should be the mid to high rate within the rate range for the appropriate soil type and organic matter.

Early Preplant and Preemergence (Spring Applications)

SPARTAN ADVANCE may be applied preplant on the soil surface in the spring to control weeds in conventional and conservation tillage systems. SPARTAN ADVANCE can be applied prior to planting until 3 days after planting as a preemergence broadcast or banded soil application if corn seedlings have not broken the soil surface and if the seed furrow is completely closed. For preemergence applications 14-21 or more days prior to planting, use the mid to high rate in the appropriate rate range for the soil and organic matter type listed in Table 1. To improve weed control spectrum, SPARTAN ADVANCE can be tank mixed with Aim™, Rage D-Tech™, or other herbicides labeled for use in corn. To control insect pests such as cutworm or armyworm that may be present, SPARTAN ADVANCE may be tank mixed with insecticides including Mustang Max™ or Brigade™. When planting into soil treated preplant with SPARTAN ADVANCE, minimize soil disturbance to maintain the herbicide barrier on the soil surface to achieve maximum weed control. Observe all precautions, instructions, and rotational cropping guidelines of each product's label when tank mixing, including all references to potential carryover and crop injury warnings or restrictions.

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Precautions

These Crop Specific Use directions are based upon the interactive effects of SPARTAN ADVANCE and the primary soil and environmental factors, which affect its activity on various weed species and tolerance among crops. The user is required to observe the instructions and guidance previously presented under General Application Instructions, General SPARTAN ADVANCE Product Use Rates, Rotational Crop Guidelines, Replanting Instructions, Weed Controlled and any other section of this label pertinent to the anticipated crop use. It is important to note that not all varieties or cultivars of a given crop species have been evaluated under treatment with SPARTAN ADVANCE. Consult university or extension weed management specialists for additional information on specific local varieties or cultivars and any other pertinent information on SPARTAN ADVANCE under specific local conditions.

Hybrid Corn Seed Production

Corn inbred lines grown for hybrid seed production may be injured in the growing season following an application of SPARTAN ADVANCE. Inbred lines should be thoroughly tested for crop tolerance before rotating to production scale acreages. FMC will not accept responsibility for any crop injury on field corn grown for seed following an application of SPARTAN ADVANCE.

Restrictions

Do not apply more than 86.4 fluid ounces per twelve-month period. The twelve-month period is considered to begin upon the initial SPARTAN ADVANCE application.

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

Do not apply to frozen soils or existing snow cover to prevent SPARTAN ADVANCE runoff from rain or snowmelt that may occur following application.

FALLOW OR POST HARVEST BURNDOWN (28)

SPARTAN ADVANCE may be applied in the fall following crop harvest or in existing fallow fields using rates recommended in table 2. Follow crop rotational restrictions when replanting following Spartan Advance applications.

Table 2

SPARTAN ADVANCE Use Rate Table (Fall or Post Harvest Burndown) Fall and Spring Fallow Applications			
Broadcast Rate	Fluid Ounces SPARTAN ADVANCE per acre*		
	Soil Texture		
% Organic Matter	Coarse	Medium	Fine
<1.5	21.0 - 26.0	21.0 - 32.0	26.0 - 35.0
1.5-3.0	26.0 - 35.0	26.0 - 43.0	32.0 - 46.0
>3	32.0 - 43.0	32.0 - 57.0	35.0 - 57.0

Refer to the previous information on soil types under the COARSE, MEDIUM, and FINE categories
Use higher rates for soils of pH less than 7.0 and lowest rate for pH greater than 7.0 within the rate range.

* When use rates of Spartan Advance are less than 32 oz, additional glyphosate will be required for effective control of emerged weeds.

Fall Application (KS, MN, ND, SD, MT, CO, NE, WY, ID, WA, OR, WI, MI)

SPARTAN ADVANCE may be applied in the fall following crop harvest or in existing fallow fields to control or suppress weeds the following season. The Rotational Crop Guidelines in the Crop Rotational Guideline Table must be followed if crops are planted the next season. SPARTAN ADVANCE should be applied to the harvested crop stubble or soil surface without incorporation. Moisture in the form of rain or snow will move and activate the product. Do not mechanically incorporate in the fall or spring after application because this activity may destroy the herbicide barrier and weed escapes can occur. Do not apply to frozen soils to prevent SPARTAN ADVANCE runoff from rain or snow that may occur following application. SPARTAN ADVANCE may be tank mixed with herbicides to control emerged weeds. Sequential applications may be needed depending on weed size. Use full, recommended rates of burndown herbicides in combination with SPARTAN ADVANCE, or sequential applications as needed. Higher aerial spray volumes are required when there is a dense weed population or canopy.

SPARTAN ADVANCE can be tank mixed with other herbicides. Observe all precautions, instructions, and rotational cropping guidelines of each product's label when tank mixing, including all references to potential carryover and crop injury warnings or restrictions.

Spring Preemergence Application

SPARTAN ADVANCE may be applied as a fallow treatment early in the spring. Follow the same use rate recommendations and application guidelines listed under the Fall Application section above.

When applied according to directions, SPARTAN ADVANCE will provide control of:

Kochia (ALS and Triazine Resistant)	Pigweed, redroot
Lambsquarters, common	Pigweed, smooth
Morningglory, ivyleaf	Thistle, Russian
Morningglory, tall	Waterhemp, common
Nightshade, Eastern Black	Waterhemp, tall

Precautions

These Crop Specific Use directions are based upon the interactive effects of SPARTAN ADVANCE and the primary soil and environmental factors, which affect its activity on various weed species and tolerance among crops. The user is required to observe the instructions and guidance previously presented under General Application Instructions, General SPARTAN ADVANCE Product Use Rates, Rotational Crop Guidelines, Replanting Instructions, Weed Controlled and any other section of this label pertinent to the anticipated crop use. It is important to note that not all varieties or cultivars of a given crop species have been evaluated under treatment with SPARTAN ADVANCE. Consult university or extension weed management specialists for additional information on specific local varieties or cultivars and any other pertinent information on SPARTAN ADVANCE under specific local conditions.

Restrictions

Do not apply more than 57.6 fluid ounces per twelve-month period. The twelve-month period is considered to begin upon the initial SPARTAN ADVANCE application.

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

Do not apply to frozen soils or existing snow cover to prevent SPARTAN ADVANCE runoff from rain or snowmelt that may occur following application.

See the CROP ROTATION INTERVALS Table for crops which can be planted after a fallow (fall or spring) or post harvest application.

PEANUTS (29)

Southeastern United States Only (AL, GA, MS, NC, SC, VA)

Apply SPARTAN ADVANCE alone or in combination with other registered herbicides for the control of key grass and broadleaf weeds in peanut production. Refer to the information below for specific use directions. Spartan Herbicide is registered for use on peanuts only in the following states: AL, GA, MS, NC, SC and VA. Refer to table 3 for recommended use rates.

Table 3

When applied as directed at 34 ounces per acre, SPARTAN ADVANCE Herbicide will provide control of the following weed species¹:

Amaranth, spreen	Jimsonweed
Copperleaf, hophornbeam	Lambsquarters, common
Croton, tropic	Morningglory, entireleaf
Crownbeard, golden	Morningglory, red
Devilsclaw	

¹Specified weeds are controlled in coarse (sand and loamy sand) soils. Medium and fine soils (sandy loam, clay loam, clay) or soils with organic matter greater than 1.0% should use the next higher rate shown below (45 ounces).

When applied as directed at 45 ounces per acre, SPARTAN ADVANCE Herbicide will provide control of the following weed species²:

All the weeds controlled at 34 dry ounces plus:	
Amaranthus, Palmer	Morningglory, smallflower
Crabgrass, large	Poinsettia, wild
Crabgrass, Southern	Redweed
Eclipta	Senna, coffee
Goosegrass	Signalgrass, broadleaf
Morningglory, pitted	Smartweed, PA (seedling)

²Specified weeds are controlled in coarse (sand and loamy sand) soils. Medium and fine soils (sandy loam, clay loam, clay) or soils with organic matter greater than 1.0% should use the next higher rate shown below (57 ounces).

When applied as directed at 57 ounces per acre, Spartan ADVANCE Herbicide will provide control of the following weed species³:

All the weeds controlled at 45 dry ounces plus:	
Anoda, spurred	Purslane, common
Cocklebur, common	Sida, prickly
Nutsedge, yellow	Starbur, prickly
Nutsedge, purple	

³Specified weeds are controlled in coarse (sand and loamy sand) soils. Medium and fine soils (sandy loam, clay loam, clay) or soils with organic matter greater than 1.0% should use application rates between 57 and 64.8 ounces per acre. Do not exceed 64.8 ounces per acre.

In soils with pH greater than 7, use the next lower Spartan Herbicide application rate from table 3 above. Irrigation with alkaline (pH 8 to 9) water can result in adverse crop response. The extent of crop response is dependent on SPARTAN ADVANCE application rate, soil type (including %OM and pH), timing (after SPARTAN ADVANCE application relative to crop emergence), amount and pH of irrigation water. Do not irrigate with water greater than pH 9.

Preplant Fall Applications

SPARTAN ADVANCE may be applied in the fall as a preplant treatment prior to peanut planting the following spring. SPARTAN ADVANCE can be used alone or in a tank mixture with other herbicides to control suscep-

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tible broadleaves, sedges and grasses in soybean. Apply SPARTAN ADVANCE in conventional tillage or conservation tillage (reduced tillage or no-tillage) cropping systems using rates recommended in Table 3. SPARTAN ADVANCE should be applied to the stubble or soil surface and allow moisture from rainfall or snow to move the product into the soil. Do not mechanically incorporate in the fall or spring as this operation can destroy the herbicide barrier allowing weed escapes to occur. Do not apply to frozen soils or existing snow cover to prevent SPARTAN ADVANCE runoff from rain or snowmelt that may occur following application. SPARTAN ADVANCE may be tank mixed with other burndown herbicides to control emerged weeds in the fall or residual soil herbicides that are labeled for fall use on peanut. Due to the extended period of time between the fall application and peanut planting, the use rate of SPARTAN ADVANCE should be the mid to high rate within the rate range for the appropriate soil type and organic matter.

Early Preplant and Preemergence

SPARTAN ADVANCE herbicide may be applied to the soil surface at planting, or within 12 hours after planting. See table 3 for recommended use rates. Do not use SPARTAN ADVANCE Herbicide for "at-crack" type applications or apply to exposed peanut tissue. Such use can result in significant adverse crop response. Under conditions of exceptionally high weed populations or when weeds not controlled by SPARTAN ADVANCE are anticipated, the use of suitable postemergent peanut herbicides is recommended.

Precautions

These Crop Specific Use directions are based upon the interactive effects of SPARTAN ADVANCE and the primary soil and environmental factors, which affect its activity on various weed species and tolerance among crops. The user is required to observe the instructions and guidance previously presented under General Application Instructions, SPARTAN ADVANCE Product Use Rates, Rotational Crop Guidelines, Replanting Instructions, Weed Controlled and any other section of this label pertinent to the anticipated crop use. It is important to note that not all varieties or cultivars of a given crop species have been evaluated under treatment with SPARTAN ADVANCE. Consult university or extension weed management specialists for additional information on specific local varieties or cultivars and any other pertinent information on SPARTAN ADVANCE under specific local conditions.

Restrictions

Do not apply more than 64.8 ounces of Spartan ADVANCE per acre per twelve-month period. The twelve-month period is considered to begin upon the initial Spartan application.

Do not feed treated peanut forage or peanut hay to livestock.

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

Do not irrigate with water having a pH higher than 9.

Do not apply at cracking time.

POTATOES (30)

Preemergence Applications

Apply Spartan Herbicide by aerial application as a preemergence treatment following planting and after dragoff, but prior to potato emergence. Optimum performance can be achieved if SPARTAN ADVANCE is applied to the soil surface and either rainfall or overhead irrigation is used to activate the product. If no moisture is received within 7 days following application in areas without irrigation, a shallow incorporation (less than 2 inches) may be needed prior to weed and potato emergence to activate the product. Select the appropriate use rate based on soil texture and organic matter as shown in Table 4. Do not apply SPARTAN ADVANCE if the potatoes have emerged from the soil as undesirable crop response may occur. SPARTAN ADVANCE may be tank mixed with other soil-applied herbicides labeled for use in potatoes to improve weed management and increase weed control spectrum.

Table 4

SPARTAN ADVANCE Use Rate Table (Potatoes) Preemergence Application			
Broadcast Rate	Fluid Ounces SPARTAN ADVANCE per acre*		
	Soil Texture		
% Organic Matter	Coarse	Medium	Fine
<1.5	14.0 - 21.0	14.0 - 21.0	18.0 - 25.0
1.5 - 3.0	14.0 - 21.0	18.0 - 28.0	21.0 - 28.0
>3.0	21.0 - 28.0	25.0 - 32.0	28.0 - 38.0

*Refer to the previous information on soil types under the COARSE, MEDIUM, and FINE categories
Use higher rates for soils of pH less than 7.0 and lowest rate for pH greater than 7.0 within the rate range.

* When use rates of Spartan Advance are less than 32 oz, additional glyphosate will be required for effective control of emerged weeds.

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Weeds Controlled

When applied according to directions, SPARTAN ADVANCE will provide control of:

Amaranth, Palmer	Nightshade, Eastern black
Filaree, redstem	Pigweed, redroot
Kochia (ALS and Triazine Resistant)	Pigweed, smooth
Lambsquarters, common	Thistle, Russian
Morningglory, ivyleaf	Waterhemp, common
Morningglory, tall	Waterhemp, tall

Precautions

Potato varieties may vary in their response to herbicide applications. When using SPARTAN ADVANCE on an untested variety, always determine the crop tolerance before planting. Some potato varieties, including Sangre, Shepody and Snowden, have shown sensitivity to Spartan Herbicide. Caution should be used when planting these varieties on marginal coarse soils.

These Crop Specific Use directions are based upon the interactive effects of SPARTAN ADVANCE and the primary soil and environmental factors, which affect its activity on various weed species and tolerance among crops. The user is required to observe the instructions and guidance previously presented under General Application Instructions, General SPARTAN ADVANCE Product Use Rates, Rotational Crop Guidelines, Replanting Instructions, Weed Controlled and any other section of this label pertinent to the anticipated crop use. It is important to note that not all varieties or cultivars of a given crop species have been evaluated under treatment with SPARTAN ADVANCE. Consult university or extension weed management specialists for additional information on specific local varieties or cultivars and any other pertinent information on SPARTAN ADVANCE under specific local conditions.

Restrictions

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

Do not apply Spartan Herbicide after potato emergence from the soil as undesirable crop response may occur.

Do not apply more than 57.6 ounces per acre per twelve-month period. The twelve-month period is considered to begin upon the initial Spartan application.

SOYBEANS, Conventional and GMO (31)

Apply SPARTAN ADVANCE in conventional tillage, conservation tillage, reduced tillage or no-tillage cropping systems using rates recommended in the SPARTAN ADVANCE Use Rate Table 5.

Table 5

SPARTAN ADVANCE Use Rate Table (Soybeans)			
Fall, Spring Early Preplant and Preemergence Applications			
Broadcast Rate	Fluid Ounces SPARTAN ADVANCE per acre*		
	Soil Texture		
% Organic Matter	Coarse	Medium	Fine
<1.5	32.0 - 43.0	43.0 - 57.0	57.0
1.5-3	43.0 - 57.0	57.0 - 70.0	70.0
>3	57.0 - 70.0	70.0 - 85.0	85.0

Refer to the previous information on soil types under the COARSE, MEDIUM, and FINE categories
Use higher rates for soils of pH less than 7.0 and lowest rate for pH greater than 7.0 within the rate range.

* When use rates of Spartan Advance are less than 32 oz, additional glyphosate will be required for effective control of emerged weeds.

Do not harvest soybean forage for livestock feed.

Preplant Fall Applications

SPARTAN ADVANCE may be applied in the fall as a preplant treatment prior to soybean planting the following spring using rates recommended in Table 5. SPARTAN ADVANCE can be used alone or in a tank mixture with other herbicides to control susceptible broadleaves, sedges and grasses in soybean. SPARTAN ADVANCE should be applied to the stubble or soil surface and allow moisture from rainfall or snow to move the product into the soil. Do not mechanically incorporate in the fall or spring as this operation can destroy the herbicide barrier allowing weed escapes to occur. Do not apply to frozen soils or existing snow cover to prevent SPARTAN ADVANCE runoff from rain or snowmelt that may occur following application. SPARTAN ADVANCE may be tank mixed with other burndown herbicides to control emerged weeds in the fall or residual soil herbicides that are labeled for fall use on soybean. Due to the extended period of time between the fall application and soybean planting, the use rate of SPARTAN ADVANCE should be the mid to high rate within the rate range for the appropriate soil type and organic matter.

Preplant & Preemergence Applications

SPARTAN ADVANCE can be applied prior to planting or up to 3 days after planting as a preemergent soil application if seedlings have not broken the soil surface and if the seed furrow is completely closed. When applications are delayed greater than 3 days after planting, injury may occur if seeds are germinating. SPARTAN ADVANCE applied near or after crop emergence may cause severe injury to the crop. Refer to table 5 for recommended use rates. To improve weed control spectrum, SPAR-

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TAN ADVANCE can be tank mixed with Aim™, Rage D-Tech™, or other herbicides labeled for use in soybean. Always follow the most restrictive label when tank mixing.

Reduced Rates for Roundup Ready Soybeans

SPARTAN ADVANCE may be used at reduced rates (table 6) in conjunction with planned follow-up weed control applications with glyphosate based herbicide products labeled for use on Roundup Ready soybean varieties. For preemergent weed control in reduced rate programs additional glyphosate may be needed to provide more consistent burndown of existing weeds, especially if rates below 32 oz of Spartan Advance are used. Follow all SPARTAN ADVANCE application directions.

Apply before planting, at planting time or prior to seed germination. Do not apply later than 3 days after planting or if seeds are germinating. Properly closed seed furrows are required when applying at planting time or before seed germination. Recommended postemergence treatments may include any product or combination of products labeled for use.

SOYBEANS - REDUCED RATE APPLICATIONS (32)

Table 6

SPARTAN ADVANCE Use Rate Table for Reduced Rates Fall, Preplant, and Preemergence Applications (Reduced rates for the Suppression of Weeds Listed to Reduce Early Season Weed Competition in Glyphosate Tolerant Soybean Systems.)			
Broadcast Rate	Fluid Ounces SPARTAN ADVANCE per acre*		
	Soil Texture		
% Organic Matter	Coarse	Medium	Fine
1.0 - 2.0	23.0	23.0-30.0	30.0-36.0
2.0 - 4.0	23.0-30.0	30.0-36.0	36.0

Refer to the following chart for information on soil type under the COARSE, MEDIUM, and FINE categories.
Use higher rates for soils of pH less than 7.0 and lowest rate for pH greater than 7.0 within the rate range.
* Do not use on coarse soils classified as sand, which have less than 1% organic matter.

* When use rates of Spartan Advance are less than 32 oz, additional glyphosate will be required for effective control of emerged weeds.

Precautions

When applying SPARTAN ADVANCE with other registered herbicides, refer to specific label information on precautions, instructions, limitations, application methods and timings, and weeds controlled.

SPARTAN ADVANCE is especially effective against a wide range of economic broadleaf and grass weeds. The same processes that SPARTAN ADVANCE affects in these weeds can, under certain conditions, be affected in soybeans. These conditions include high pH (7.5 and above), cool 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 a return to normal growing conditions.

Restrictions

Do not apply more than 86.4 fluid ounces per acre of SPARTAN ADVANCE per twelve-month period. The twelve-month period is considered to begin upon the initial SPARTAN ADVANCE application.

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

Do not apply to frozen soils or existing snow cover to prevent SPARTAN ADVANCE runoff from rain or snowmelt that may occur following application. Do not apply after crop seed germination.

Do not harvest forage of feed forage to livestock

SUGARCANE (33)

Apply SPARTAN ADVANCE as a broadcast or banded premerge soil applied treatment for the control of broadleaf weeds, grasses and sedges in sugarcane. Refer to the SPARTAN ADVANCE Product Use Rate Table 7 for specific use information.

Table 7

SPARTAN ADVANCE Use Rate Table (Sugarcane) Premerge and Planting Time Applications			
Broadcast Rate	Fluid Ounces SPARTAN ADVANCE per acre		
	Soil Texture		
% Organic Matter	Coarse	Medium	Fine
<1.5	32.0 - 43.0	43.0 - 57.0	57.0
1.5-3	43.0 - 57.0	57.0 - 70.0	70.0
>3	57.0 - 70.0	70.0 - 85.0	85.0

Refer to the previous information on soil types under the COARSE, MEDIUM, and FINE categories
Use higher rates for soils of pH less than 7.0 and lowest rate for pH greater than 7.0 within the rate range.

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Planting Time Applications

Apply SPARTAN ADVANCE preemergent to newly planted sugarcane. Use the higher rate on clay soils and/or soils with organic matter content higher than 2 percent. Apply either by air in a minimum of 5 gallons of spray per acre or by ground equipment in a minimum of 15 gallons of spray per acre. SPARTAN ADVANCE may be applied with other herbicides registered for use in sugarcane.

Aerial Applications

SPARTAN ADVANCE may be applied preemergent to newly planted sugarcane by air in a minimum of 5 gallons of finished spray per acre. SPARTAN ADVANCE may be applied with other herbicides or insecticides registered for aerial application in sugarcane.

Precautions

These Crop Specific Use directions are based upon the interactive effects of SPARTAN ADVANCE and the primary soil and environmental factors, which affect its activity on various weed species and tolerance among crops. The user is required to observe the instructions and guidance previously presented under General Application Instructions, General SPARTAN ADVANCE Product Use Rates, Rotational Crop Guidelines, Replanting Instructions, Weed Controlled and any other section of this label pertinent to the anticipated crop use. It is important to note that not all varieties or cultivars of a given crop species have been evaluated under treatment with SPARTAN ADVANCE. Consult university or extension weed management specialists for additional information on specific local varieties or cultivars and any other pertinent information on SPARTAN ADVANCE under specific local conditions.

Restrictions

Do not apply more than 86.4 fluid ounces per acre of SPARTAN ADVANCE per twelve-month period. The twelve-month period is considered to begin upon the initial SPARTAN ADVANCE application.

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

Do not allow spray to contact crop leaves.

Weeds Controlled

When applied according to directions, SPARTAN ADVANCE will provide control of:

Amaranth, Palmer	Pigweed, red root
Kochia (ALS and Triazine Resistant)	Pigweed, smooth
Lambsquarters, common	Sida, prickly
Morningglory, ivyleaf	Thistle, Russian
Morningglory, tall	Waterhemp, common
Nightshade, Eastern black	Waterhemp, tall

See section (26) for POST-emergent weeds controlled

SUNFLOWERS (34)

Table 8

SPARTAN ADVANCE Use Rate Table (Sunflowers) Fall, Early Spring Preplant and Preemergence Applications			
Broadcast Rate	Fluid Ounces SPARTAN ADVANCE per acre*		
	Soil Texture		
% Organic Matter	Coarse	Medium	Fine
<1.5	21.0 - 26.0	21.0 - 32.0	26.0 - 35.0
1.5-3.0	21.0 - 32.0	26.0 - 43.0	32.0 - 46.0
>3	26.0 - 43.0	32.0 - 46.0	43.0 - 57.0

Refer to the previous information on soil types under the COARSE, MEDIUM, and FINE categories
Use higher rates for soils of pH less than 7.0 and lowest rate for pH greater than 7.0 within the rate range.

* When use rates of Spartan Advance are less than 32 oz, additional glyphosate will be necessary for control of emerged weeds. For enhanced control of emerged very small kochia and other broadleaf weeds, the addition of Aim Herbicide is recommended.

Fall Applications

SPARTAN ADVANCE may be applied in the fall as a preplant treatment to control or suppress weeds prior to planting sunflowers the following spring. SPARTAN ADVANCE should be applied to the stubble or soil surface and allow moisture from rainfall or snow to move the product into the soil. Do not mechanically incorporate in the fall or spring as this can destroy the herbicide barrier and allowing weed escapes to occur. Do not apply to frozen soils or to existing snow cover to prevent SPARTAN ADVANCE runoff from rain or snow melt that may occur following application. SPARTAN ADVANCE may be tank mixed with other residual soil herbicides that are labeled for fall use on sunflowers. Select the appropriate rate from Table 7 above within the correct soil type and organic matter range. When applying SPARTAN ADVANCE in the fall, use a mid to high rate within the rate range for the appropriate soil type and organic matter.

Early Preplant and Preemergence (Spring Applications)

SPARTAN ADVANCE may be applied preplant on the soil surface in the spring to control weeds in sunflowers. SPARTAN ADVANCE can be applied early preplant prior to planting up to 3 days after planting as a pre-

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emergent soil application if seedlings have not broken the soil surface and if the seed furrow is completely closed. For preemergent applications greater than 3 weeks prior to planting, use the high rate within the appropriate rate range for the soil and organic matter type listed in the use rate chart above (Table 8). To improve weed control spectrum, SPARTAN ADVANCE can be tank mixed with Aim™, Rage™, or other herbicides labeled for use in sunflower. If adequate moisture (1/2" to 1" of rainfall or irrigation) is not received within 7 to 10 days, erratic pre-emergent weed control may result. Erratic preemergent weed control may also occur if dry conditions persist throughout the growing season. Additional moisture is needed throughout the growing season to maintain herbicide activity and prevent weed escapes.

Precautions

When applying SPARTAN ADVANCE to coarse textured soils, it is recommended that growers allow a minimum of 7-14 days from application to planting. Best results are achieved with SPARTAN ADVANCE when applications are made early preplant and greater than 14 days before planting.

Some adverse crop response may occur on coarse textured soils with low organic matter (less than 1.5%) and pH of 7.8 or higher, or on highly eroded soils, or in areas of calcareous outcroppings. SPARTAN ADVANCE use rates should be reduced or SPARTAN ADVANCE should not be used in those areas. Inadequate seed furrow closure or shallow planting (less than 1.0 inch) may result in undesirable crop response. As expected, poor growing conditions such as excessive moisture, low temperatures, soil compaction and diseases may also cause undesirable crop response.

These Crop Specific Use directions are based upon the interactive effects of SPARTAN ADVANCE and the primary soil and environmental factors, which affect its activity on various weed species and tolerance among crops. The user is required to observe the instructions and guidance previously presented under General Application Instructions, General SPARTAN ADVANCE Product Use Rates, Rotational Crop Guidelines, Replanting Instructions, Weed Controlled and any other section of this label pertinent to the anticipated crop use. It is important to note that not all varieties or cultivars of a given crop species have been evaluated under treatment with SPARTAN ADVANCE. Consult university or extension weed management specialists for additional information on specific local varieties or cultivars and any other pertinent information on SPARTAN ADVANCE under specific local conditions.

Restrictions

Do not apply more than the use rate listed, by soil type, % OM and pH, in table 8 of the sunflower section in a 12 month period.

Do not apply more than 57.6 fluid ounces per acre of SPARTAN ADVANCE per twelve-month period. The twelve-month period is considered to begin upon the initial SPARTAN ADVANCE application.

Do not apply to frozen soils or existing snow cover to prevent SPARTAN ADVANCE runoff from rain or snowmelt that may occur following application.

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

Weeds Controlled

When applied according to directions, SPARTAN ADVANCE will provide control of:

Amaranth, Palmer	Pigweed, red root
Kochia (ALS and Triazine Resistant)	Pigweed, smooth
Lambsquarters, common	Thistle, Russian
Nightshade, Eastern black	Waterhemp, common
Nightshade, black	Waterhemp, tall

See section (26) for POST-emergent weeds controlled

CABBAGE (Transplanted Only) (35)

Table 9

SPARTAN ADVANCE Use Rate Table (Cabbage) Fall or Spring Early Preplant and Pretransplant Applications			
Broadcast Rate	Fluid Ounces SPARTAN ADVANCE per acre*		
	Soil Texture		
% Organic Matter	Coarse	Medium	Fine
<1.5	16.0 - 21.0	21.0 - 32.0	21.0 - 43.0
1.5-3.0	21.0 - 43.0	43.0 - 64.0	43.0 - 64.0
>3.0	43.0 - 64.0	43.0 - 85.0	43.0 - 85.0

Refer to the previous information on soil types under the COARSE, MEDIUM, and FINE categories.
Use higher rates for soils of pH less than 7.0 and lowest rate for pH greater than 7.0 within the rate range.

* When use rates of Spartan Advance are less than 32 oz, additional glyphosate will be required for effective control of emerged weeds.

Early Preplant (Fall Application or Spring Application)

SPARTAN ADVANCE may be applied in the states of MN, ND, SD, MT, CO, NE, WY, ID, WA, OR, WI, or MI only in the fall or spring preceding the growing season to control weeds prior to transplanting cabbage. See rate table 9 for recommended application rates. SPARTAN ADVANCE

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may be applied in the spring from 60 days prior to planting up to planting time. SPARTAN ADVANCE should be applied to the harvested crop stubble or soil surface without incorporation. Moisture in the form of rain or snow will move and activate the product into the soil. Do not mechanically incorporate in the fall or spring after application as this may destroy the herbicide barrier and weed escapes can occur. Do not apply to frozen soils to prevent SPARTAN ADVANCE runoff from rain or snow that may occur following application. SPARTAN ADVANCE may be tank mixed with other burndown herbicides to control emerged weeds in the fall or spring or with residual soil herbicides that are labeled for fall use on cabbage. Use the full, recommended rates of burndown herbicides in combination with SPARTAN ADVANCE, or split applications as needed. Observe all precautions, instructions, and rotational cropping guidelines of each product's label when tank mixing, including all references to potential carryover and crop injury warnings or restrictions.

Transplant Cabbage

SPARTAN ADVANCE may be applied Pretransplant as a broadcast or banded treatment to transplanted cabbage only. Make applications broadcast or banded treatment prior to transplanting.

Precautions

These Crop Specific Use directions are based upon the interactive effects of SPARTAN ADVANCE and the primary soil and environmental factors, which affect its activity on various weed species and tolerance among crops. The user is required to observe the instructions and guidance previously presented under General Application Instructions, General SPARTAN ADVANCE Product Use Rates, Rotational Crop Guidelines, Replanting Instructions, Weed Controlled and any other section of this label pertinent to the anticipated crop use. It is important to note that not all varieties or cultivars of a given crop species have been evaluated under treatment with SPARTAN ADVANCE. Consult university or extension weed management specialists for additional information on specific local varieties or cultivars and any other pertinent information on SPARTAN ADVANCE under specific local conditions.

Restrictions

Do not apply more than 86.4 fluid ounces per acre of SPARTAN ADVANCE per application or per twelve-month period. The twelve-month period is considered to begin upon the initial SPARTAN ADVANCE application.

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

The preharvest Interval is 80 days.

DRY SHELLED BEANS AND PEAS (36)

Dried cultivars of bean (*Lupinus*); bean (*Phaseolus*) (includes field bean, kidney bean, lima bean (dry), navy bean, pinto bean, tepary bean); bean (*Vigna*) (includes adzuki bean, blackeyed pea, catjang, cowpea, crowder pea moth bean, lentil, mung bean, rice bean, southern pea, urd bean); broad bean (dry); chickpea; guar; lab lab bean; pea (*Pisum*) (includes field pea) and pigeon pea.

Table 10

SPARTAN ADVANCE Use Rate Table (Dry Shelled Beans Peas) Fall or Spring Early Preplant and Preemergence Applications			
Broadcast Rate	Fluid Ounces SPARTAN ADVANCE per acre*		
	Soil Texture		
% Organic Matter	Coarse	Medium	Fine
<1.5	16.0 – 21.0	21.0 – 32.0	21.0 – 32.0
1.5-3.0	21.0 – 32.0	26.0 – 43.0	32.0 – 43.0
>3.0	26.0 – 43.0	32.0 – 46.0	35.0 – 57.0

Refer to the previous information on soil types under the COARSE, MEDIUM, and FINE categories
Use higher rates for soils of pH less than 7.0 and lowest rate for pH greater than 7.0 within the rate range.

* When use rates of Spartan Advance are less than 32 oz, additional glyphosate will be required for effective control of emerged weeds.

Early Preplant and Fall Applications (For use only in ND, SD, MT, MN, WY, CO, NE, KS, WI, MI, OR, ID, WA, OR, MT)

SPARTAN ADVANCE may be applied in the fall as a preplant treatment to control or suppress weeds prior to planting the following spring. SPARTAN ADVANCE should be applied to the stubble or soil surface and allow moisture from rainfall or snow to move the product into the soil. Do not mechanically incorporate in the fall or spring as this can destroy the herbicide barrier and weed escapes can occur. Do not apply to frozen soils or to existing snow cover to prevent SPARTAN ADVANCE runoff from rain or snow melt that may occur following application. SPARTAN ADVANCE may be tank mixed with other residual soil herbicides that are labeled for fall use on dry bean and dry peas. Select the appropriate rate from Table 10 above within the correct soil type and organic matter range. When applying SPARTAN ADVANCE in the fall, use a mid to high rate within the rate range for the appropriate soil type and organic matter.

Early Preplant and Preemergence (Spring Applications)

SPARTAN ADVANCE may be applied preplant on the soil surface in the

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spring to control weeds in dry bean and dry peas. SPARTAN ADVANCE can be applied early preplant prior to planting up to 3 days after planting as a preemerge soil application if seedlings have not broken the soil surface and if the seed furrow is completely closed. For preemerge applications greater than 3 weeks prior to planting, use the high rate within the appropriate rate range for the soil and organic matter type listed in the use rate chart above Table 10. SPARTAN ADVANCE can be tank mixed with other preemerge herbicides labeled for use on dry bean and dry peas. If adequate moisture (1/2" to 1" of rainfall or irrigation) is not received within 7 to 10 days, erratic preemergent weed control may result. Erratic preemergent weed control may also occur if dry conditions persist throughout the growing season. Additional moisture is needed throughout the growing season to maintain herbicide activity and prevent weed escapes.

Precautions

When applying SPARTAN ADVANCE to coarse textured soils, it is recommended that growers allow a minimum of 7-14 days from application to planting. Best results are achieved with SPARTAN ADVANCE when applications are made early preplant and greater than 14 days before planting.

Some adverse crop response may occur on coarse textured soils with low organic matter (less than 1.5%) and pH of 7.8 or higher, or on highly eroded soils, or in areas of calcareous outcroppings. SPARTAN ADVANCE use rates should be reduced in these areas. Inadequate seed furrow closure or shallow planting (less than 1.0 inch) may result in undesirable crop response. As expected, poor growing conditions such as excessive moisture, low temperatures, soil compaction and diseases may also cause undesirable crop response.

These Crop Specific Use directions are based upon the interactive effects of SPARTAN ADVANCE and the primary soil and environmental factors, which affect its activity on various weed species and tolerance among crops. The user is required to observe the instructions and guidance previously presented under General Application Instructions, General SPARTAN ADVANCE Product Use Rates, Rotational Crop Guidelines, Replanting Instructions, Weed Controlled and any other section of this label pertinent to the anticipated crop use. It is important to note that not all varieties or cultivars of a given crop species have been evaluated under treatment with SPARTAN ADVANCE. Consult university or extension weed management specialists for additional information on specific local varieties or cultivars and any other pertinent information on SPARTAN ADVANCE under specific local conditions.

Restrictions

Do not apply more than 57.6 fluid ounces per acre per twelve-month period. The twelve-month period is considered to begin upon the initial SPARTAN ADVANCE application.

Do not apply after crop emerges, or if the seedling is close to the soil surface.

Do not apply to frozen soils or to existing snow cover to prevent SPARTAN ADVANCE runoff from rain or snow melt that may occur following application.

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

Do not feed livestock treated crop or allow them to graze harvested fields. The preharvest interval is 90 days.

Weeds Controlled

When applied according to directions, SPARTAN ADVANCE will provide control of:

Kochia (ALS and Triazine Resistant)	Thistle, Russian
Lambsquarters, common	Pigweed, smooth
Nightshade, Eastern black	Waterhemp, common
Nightshade, black	Waterhemp, tall
Pigweed, red root	

See section (26) for POST-emergent weeds controlled

HORSERADISH (37)

Table 11

SPARTAN ADVANCE Use Rate Table (Horseradish) Fall or Spring Early Preplant and Preemergence Applications			
Broadcast Rate	Fluid Ounces SPARTAN ADVANCE per acre*		
	Soil Texture		
% Organic Matter	Coarse	Medium	Fine
<1.5	16.0 - 32.0	21.0 - 32.0	21.0 - 32.0
1.5-3.0	32.0 - 43.0	43.0 - 57.0	43.0 - 57.0
>3.0	43.0 - 53.0	43.0 - 57.0	43.0 - 57.0

Refer to the previous information on soil types under the COARSE, MEDIUM, and FINE categories
Use higher rates for soils of pH less than 7.0 and lowest rate for pH greater than 7.0 within the rate range.

* When use rates of Spartan Advance are less than 32 oz, additional glyphosate will be required for effective control of emerged weeds.

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SPARTAN ADVANCE may be applied as a preplant premerge by ground in a minimum of 15 gallons of finished spray.

Early Preplant (Fall Application or Spring Application)

SPARTAN ADVANCE may be applied in the fall or spring preceding the growing season to control or suppress weeds prior to or up to the planting of horseradish. See rate table 11 for application rates. SPARTAN ADVANCE may be applied in the spring from 60 days prior to planting up to planting. SPARTAN ADVANCE should be applied to the harvested crop stubble or soil surface without incorporation. Moisture in the form of rain or snow will move and activate the product into the soil. Do not mechanically incorporate in the fall or spring after application as this may destroy the herbicide barrier and weed escapes may occur. Do not apply to frozen soils to prevent SPARTAN ADVANCE runoff from rain or snow that may occur following application. SPARTAN ADVANCE may be tank mixed with other burndown herbicides to control emerged weeds in the fall or spring or with residual soil herbicides that are labeled for use on horseradish. Use full, recommended rates of burndown herbicides in combination with SPARTAN ADVANCE, or split applications as needed. Observe all precautions, instructions, and rotational cropping guidelines of each product label when tank mixing, including all references to potential carryover and crop injury warnings or restrictions.

Preemergence

SPARTAN ADVANCE may be applied premerge as a broadcast or banded treatment on horseradish. Applications should be made broadcast prior to planting, broadcast soon after planting but at least 5 days before crop emergence. Use the higher SPARTAN ADVANCE rates on clay soils and/or soils with greater than 1% organic matter. SPARTAN ADVANCE may be applied with other pesticides registered for use on horseradish.

Precautions

These Crop Specific Use directions are based upon the interactive effects of SPARTAN ADVANCE and the primary soil and environmental factors, which affect its activity on various weed species and tolerance among crops. The user is required to observe the instructions and guidance previously presented under General Application Instructions, General SPARTAN ADVANCE Product Use Rates, Rotational Crop Guidelines, Replanting Instructions, Weed Controlled and any other section of this label pertinent to the anticipated crop use. It is important to note that not all varieties or cultivars of a given crop species have been evaluated under treatment with SPARTAN ADVANCE. Consult university or extension weed management specialists for additional information on specific local varieties or cultivars and any other pertinent information on SPARTAN ADVANCE under specific local conditions.

Restrictions

Do not apply more than 57.6 fluid ounces per acre of SPARTAN ADVANCE per application or per twelve-month period. The twelve-month period is considered to begin upon the initial SPARTAN ADVANCE application.

Do not apply directly on the crop after the crop emerges or if the seedling sprouts are close to the soil surface.

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

LIMA BEANS, SUCCULENT (38)

SPARTAN ADVANCE may be applied to limas prior to planting, up to 3 days after planting if seedlings have not broken the soil surface and if the seed furrow is completely closed. See rate table 12 for recommended application rates. Applications should be made with ground equipment in a minimum of 10 gallons of finished spray per acre.

Table 12

SPARTAN ADVANCE Use Rate Table (Succulent Lima Beans) Spring Preemergence Applications			
Broadcast Rate	Fluid Ounces SPARTAN ADVANCE per acre*		
	Soil Texture		
% Organic Matter	Coarse	Medium	Fine
<1.5	16.0 - 26.0	21.0 - 43.0	26.0 - 43.0
1.5 - 3.0	21.0 - 32.0	26.0 - 43.0	32.0 - 43.0
>3.0	26.0 - 43.0	32.0 - 43.0	35.0 - 43.0

Refer to the previous information on soil types under the COARSE, MEDIUM, and FINE categories
Use higher rates for soils of pH less than 7.0 and lowest rate for pH greater than 7.0 within the rate range.

* When use rates of Spartan Advance are less than 32 oz, additional glyphosate will be required for effective control of emerged weeds.

Precautions

When applying SPARTAN ADVANCE to coarse textured soils, it is recommended that growers allow a minimum of 7-14 days from application to planting. Best results are achieved with SPARTAN ADVANCE when applications are made early preplant and greater than 14 days before planting.

Some adverse crop response may occur on coarse textured soils with low organic matter (less than 1%) and pH of 7.8 or higher, or on highly eroded soils, or in areas of calcareous outcroppings. SPARTAN AD-

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VANCE use rates should be reduced in those areas. Inadequate seed furrow closure or shallow planting (less than 1.0 inch) may result in undesirable crop response. As expected, poor growing conditions such as excessive moisture, low temperatures, soil compaction and diseases may also cause undesirable crop response.

These Crop Specific Use directions are based upon the interactive effects of SPARTAN ADVANCE and the primary soil and environmental factors, which affect its activity on various weed species and tolerance among crops. The user is required to observe the instructions and guidance previously presented under General Application Instructions, General SPARTAN ADVANCE Product Use Rates, Rotational Crop Guidelines, Replanting Instructions, Weed Controlled and any other section of this label pertinent to the anticipated crop use. It is important to note that not all varieties or cultivars of a given crop species have been evaluated under treatment with SPARTAN ADVANCE. Consult university or extension weed management specialists for additional information on specific local varieties or cultivars and any other pertinent information on SPARTAN ADVANCE under specific local conditions.

Restrictions

Do not apply more than 43.0 fluid ounces per twelve-month period. The twelve-month period is considered to begin upon the initial SPARTAN ADVANCE application.

Do not apply to coarse soils classified as sand, which have less than 1% organic matter.

Do not harvest crop for 90 days after the last application.

Do not harvest forage or feed forage to livestock.

PEPPERMINT AND SPEARMINT (39)

New Planting Applications

SPARTAN ADVANCE may be applied to new mint plantings preemergence to the mint if seedlings have not broken the soil surface and if the seed furrow is completely closed. Refer to SPARTAN ADVANCE Use Rate Table 13 for the appropriate use rate for the soil type and organic matter content. The higher rates in the range are recommended for soils of pH less than 7.0.

Table 13

SPARTAN ADVANCE Use Rate Table (Mint) For New Planting Applications			
Broadcast Rate	Fluid Ounces SPARTAN ADVANCE per acre		
	Soil Texture		
% Organic Matter	Coarse	Medium	Fine
<1.5	32.0 - 43.0	43.0 - 57.0	57.0
1.5 - 3.0	43.0 - 57.0	57.0 - 70.0	70.0
>3.0	57.0 - 70.0	70.0 - 85.0	85.0

Refer to the previous information on soil types under the COARSE, MEDIUM, and FINE categories
Use higher rates for soils of pH less than 7.0 and lowest rate for pH greater than 7.0 within the rate range.

Precautions

Applications made to mint that has emerged will result in severe injury to exposed plant tissue.

These Crop Specific Use directions are based upon the interactive effects of SPARTAN ADVANCE and the primary soil and environmental factors, which affect its activity on various weed species and tolerance among crops. The user is required to observe the instructions and guidance previously presented under General Application Instructions, General SPARTAN ADVANCE Product Use Rates, Rotational Crop Guidelines, Replanting Instructions, Weed Controlled and any other section of this label pertinent to the anticipated crop use. It is important to note that not all varieties or cultivars of a given crop species have been evaluated under treatment with SPARTAN ADVANCE. Consult university or extension weed management specialists for additional information on specific local varieties or cultivars and any other pertinent information on SPARTAN ADVANCE under specific local conditions.

Restrictions

Apply SPARTAN ADVANCE only to new mint plantings before new growth emerges.

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

Do not apply more than 86.4 fluid ounces per acre of SPARTAN ADVANCE per twelve-month period. The twelve-month period is considered to begin upon the initial SPARTAN ADVANCE application.

Do not harvest for 92 days after last application.

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**TOBACCO (Burley, Flue Cured, and Dark)
(40)**

Table 14

SPARTAN ADVANCE Use Rate Table (Tobacco) Pre-Plant and Pre-Plant Incorporated Applications			
Broadcast Rate	Fluid Ounces SPARTAN ADVANCE per acre		
	Soil Texture		
% Organic Matter	Coarse	Medium	Fine
<1.0	32 to 43	43 to 57	57
1.0 - 3	43 to 57	57 to 72	72
>3	57 to 72	72 to 88	88

Refer to the previous information on soil types under COURSE, MEDIUM and FINE categories.
Use higher rates for soil of pH less than 7 and lower rates pH greater than 7 within the rate range.

Spartan ADVANCE may be applied pre-plant or pre-plant incorporated (to a depth no greater than 2 inches) from 12 hours to 14 days prior to transplanting tobacco. In incorporating Spartan Advance deeper than 2 inches can result in inconsistent weed control.

Broadcast apply the appropriate Spartan Advance rate from Table 14 above, in a minimum of 10 gallons per acre of water, to the soil prior to transplanting.

Non-Bedded (Fields where raised beds are NOT formed prior to transplanting) Perform all accepted cultural practices for land preparation, fertilizer/fungicide incorporated, etc. prior to the application of Spartan Advance. Once the field has been prepared for planing, Spartan Advance may be surface applied or lightly pre-plant incorporated from 12 hours up to 14 days prior to transplanting.

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

If timely cultivations are not performed following a pre-transplant surface application, reduced/unacceptable weed control may occur in the drill.

Bedded (Fields where raised beds ARE formed PRIOR to transplanting) Apply Spartan Advance 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 Advance application. When incorporating prior to bedding, Spartan Advance must be thoroughly and uniformly incorporated to a depth no greater than 2 inches to avoid concentrating Spartan Advance 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 Advance and DO NOT re-bed. Re-transplant into previously formed, treated beds. For broad spectrum and optimum grass weed control a grass herbicide application will be required.

When Applied according to directions, Spartan Advance will provide control of emerged weeds as a burndown application to beds. Refer to General Postemergent Weeds Controlled Table.

When Applied according to directions, Spartan advance will provide Pre-Emergent control of :

Redroot Pigweed	Lambsquarter, Common
Smooth Pigweed	Morningglory, Ivyleaf
Redstem Filaree	Broadleaf Signalgrass
Prickly Sida	Morningglory, Tall
Hairy Gallinsoga	Pennsylvania Smartweed

Label TRACKING INFORMATION (40)

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Label Code: 10-07-08

Replaces Label Code: 04-03-08

EPA Approval Date:

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