

JUN 24 1993

Mr. Melvin M. Graben
Sandoz Agro, Inc.
1300 East Touhy Avenue
Des Plaines, IL 60018

Dear Mr. Graben:

Subject: Zorial Rapid 80[®]
EPA Registration No. 55947-77
EPA Pesticide Petition 9F3702
Application Dated October 3, 1988, Application
To Amend Labeling by Adding a Use-Pattern for
Peanuts, Proposed Labeling Submitted on May 13, 1993
May 14, 1993, May 27, 1993, and June 3, 1993

The requested tolerances for residues of norflurazon in or on peanut raw agricultural commodities have been established as requested. The subject proposed amended labeling submitted on June 3, 1993 has been reviewed and is an acceptable amendment to the subject pesticide product registration under the Federal Insecticide, Fungicide and Rodenticide Act as amended, provided that you:

1. Submit an acceptable livestock metabolism study (EPA Guideline Reference No. 171-4) on or before February 1, 1994. If an adequate study is not submitted by that date, the application to the use-site, peanuts will expire on February 1, 1995.
2. Revise the ground water advisory statement on the enclosed stamped labeling to read:

"Norflurazon is known to leach through soil into ground water under certain conditions as a result of agricultural use. Use of this product in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination with norflurazon."

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3. This acceptance of your label does not relieve you of any obligation to comply with the Worker Protection Standard (WPS). Under the WPS labeling regulations at 40 CFR 156, subpart K, § 156.200(c)(3), you are prohibited from distributing or selling any product within the scope of the WPS requirements after April 21, 1994, without amended labeling accepted by the Agency.
4. Submit five (5) printed copies of the final printed labeling before releasing the product for shipment.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA, Section 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

Stamped copies of the labeling are enclosed for your records.

Sincerely your,

Joanne I. Miller
Product Manager (23)
Fungicide/Herbicide Branch
Registration Division (H-7505C)

Enclosure

E.Wilson: Diskette # 0007b: 06-11-93

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(CONTAINER LABEL)

ZORIAL RAPID 80⁰
FOR CONTROL OF GRASS AND BROADLEAF WEEDS IN
COTTON, PEANUTS AND SOYBEANS

ACTIVE INGREDIENT:

norflurazon [4-chloro-5-(methylamino)-2-(alpha, alpha, alpha-trifluoro-m-tolyl)-3(2H)-pyridazinone] 78.6%

INERT INGREDIENTS. 21.4%
100%

Technical ingredient analysis by isomer specific method AM-0864.
Previously 80% by method T-4295.

KEEP OUT OF REACH OF CHILDREN
CAUTION
PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS (AND DOMESTIC ANIMALS)
CAUTION

Harmful if swallowed or absorbed through the skin. Avoid contact with skin, eyes or clothing. In case of skin or eye contact, flush with plenty of water.

Mixers, loaders and applicators must wear long-sleeved shirt and long pants, waterproof gloves, coveralls and shoes plus socks.

STATEMENT OF PRACTICAL TREATMENT

If swallowed: Call a physician or poison control center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person.

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

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

ACCEPTED
with COMMENTS
In EPA Letter Dated

JUN 24 1993

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

55947-77

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ENVIRONMENTAL HAZARDS

For terrestrial uses, do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply when weather conditions favor run-off or drift from treated areas. Do not contaminate water by cleaning of equipment or disposal of wastes.

Do not apply to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply when weather conditions favor run-off or drift from treated areas. Do not contaminate water by cleaning of equipment or disposal of wastes.

STORAGE AND DISPOSAL

Storage: Do not contaminate water, food or feed by storage or disposal.
Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal law. If waste cannot be disposed of by use of label instructions, contact your state pesticide or environmental control agency or hazardous waste representative at the nearest EPA Region Office for guidance.
Container Disposal: Completely empty and triple rinse container into application equipment. Then dispose of empty container in a sanitary landfill or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

WARRANTY AND CONDITIONS OF SALE

Limited Warranty and Liability

Sandoz Agro, Inc. warrants that the chemical composition of this product conforms to the chemical description on the label and is reasonably fit for the purpose stated on the label when used in accordance with directions under normal conditions of use. Sandoz makes no other warranty, express or implied, concerning the use of this product other than as indicated on the label. Buyer assumes all risks of use, storage or handling of this material not in strict accordance with directions given on the label.

EPA Reg. No. 55947-77
EPA Est. No. 55618-SC-001
Net: 5 pounds

Manufactured by: Sandoz Agro, Inc., Des Plaines, IL 60018.

ZORIAL RAPID 80 and ZORIAL SPLIT are Registered Trademarks of Sandoz Ltd.

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(DIRECTIONS FOR USE)

**ZORIAL RAPID 80
HERBICIDE**

Prosper with pesticides by using them properly! Read and follow label directions.

NOTICE: Read "LIMITED WARRANTY AND LIABILITY" on the container before buying or using. If terms are not acceptable, return at once unopened.

This labeling must be in the possession of the user at the time of the pesticide application.

DIRECTIONS FOR USE:

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

MADE IN THE U.S.A.

EPA Reg. No. 55947-77

**ZORIAL RAPID 80 and ZORIAL SPLIT are Registered Trademarks of
Sandoz Ltd.**

**SANDOZ AGRO. Inc.
1300 E. Touhy Avenue
Des Plaines, Illinois 60018**

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I. GENERAL INFORMATION

ZORIAL RAPID 80 is a preemergence herbicide for the control of certain grass, broadleaf and sedge weeds in cotton, peanuts and soybeans (see specific use directions for each crop). ZORIAL RAPID 80 must be applied and incorporated by tillage, irrigation or rainfall before weeds germinate. Susceptible weeds are controlled after they germinate and emerge white before dying.

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

The following geographic regions are described in this label:

mid South, Southeast and Texas (East of I-35)

which includes the states of Alabama, Arkansas, North Carolina and South Carolina, Florida, Georgia, Louisiana, Mississippi, Missouri (bootheel only), Tennessee, and Texas (East of interstate I-35).

Texas (West of I-35), Southwest Oklahoma and New Mexico

which includes the states of New Mexico, Oklahoma (West of interstate I-35 and South of interstate I-40), and Texas (West of interstate I-35),

Arizona

Applications in geographic areas not specifically mentioned should follow directions for use for mid South, Southeast and Texas (East of I-35).

A. REPLACEMENT AND ROTATIONAL CROPS

For 16 months following the last ZORIAL RAPID 80 application, treated acreage must only be rotated to cotton, soybeans or peanuts. In Arizona, treated acreage must only be rotated to cotton. Visual symptoms of injury (loss of pigment [whitening] in the leaf veins) and stand reduction may occur in rotational crops of soybeans or peanuts in Texas (West of I-35), Southwest Oklahoma and New Mexico planted within 16 months following the last ZORIAL RAPID 80 application.

ZORIAL RAPID 80 treated acreage may be planted to a cover crop to control soil erosion. Cover crops should be plowed under and not grazed or harvested for 16 months following the last application of ZORIAL RAPID 80. Small grain cover crops should be broadcast planted rather than drilled, to reduce risk of injury.

Peanuts can be planted as a replacement crop (e.g. following hail damage) 30 days after the last ZORIAL RAPID 80 application. Soybeans can be planted as a replacement crop 45 days after the last ZORIAL RAPID 80 application. In areas of the mid South, Southeast and Texas (East of I-35), a light reworking of the soil is recommended to remove existing plant material and maintain herbicidal activity.

Mu'tiple or sequential applications can be made in certain geographic areas, but the total quantity of ZORIAL RAPID 80 applied in a year must not exceed the broadcast rate in pounds per acre for a given soil type. Only one application per crop is allowed in peanuts and this application must be made at planting. Follow Special Directions for each geographic region, soil type and crop.

Read mixing, application and specific crop sections for additional recommendations and precautions.

B. MIXING INSTRUCTIONS

ZORIAL RAPID 80 is approved as a tank mix with other herbicides and liquid fertilizer. Herbicides approved for tank mixes with ZORIAL RAPID 80 are listed in each crop section. All tank mix products must be approved for use on the respective crop.

Predetermine the compatibility of labeled tank mixes under local conditions by mixing small proportional quantities in advance.

Amount of Herbicide to Add to One Pint of Spray Carrier
(Assuming Volume is 25 Gallons per Acre)

HERBICIDE FORMULATION	RATE PER ACRE	LEVEL TEASPOONS
Dry	1 lb.	1.5
Liquid	1 pt.	0.5

If herbicide(s) do not ball-up or form flakes, sludge, gels, oily films, layers or other precipitates, then the tested spray mix is compatible. Incompatibility in any of the above described forms will occur within 5 minutes after mixing.

If components are incompatible, the use of a compatibility agent approved for agricultural use on the respective crop is recommended. Rerun the above COMPATIBILITY TEST with a suitable compatibility agent (1/4 teaspoon is equivalent to 2 pints per 100 gallons of spray carrier).

Clean and calibrate the sprayer. Add ZORIAL RAPID 80 to the spray tank already filled with 1/4 the required volume of the water. This will eliminate or minimize foaming. Maintain agitation while filling and spraying. If a by-pass line is used, discharge at the bottom of the tank to minimize foaming.

Do not allow ZORIAL RAPID 80 spray mixture to remain in the spray tank overnight because settling could occur and resuspension would be difficult.

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Begin adding wettable powders, flowable liquids, emulsifiable concentrates, and surfactants after the spray tank is 3/4 full. Continue agitation during the addition of all the materials and while filling and spraying.

Products should be added to the spray tank in the following order:

1. Wettable powders and water dispersible granules. Wettable powders should be premixed in a small amount of water. Water dispersible granules should be added during filling. Allow both to disperse before other products are added. The order of addition is not important.
2. Flowable liquids.
3. Emulsifiable concentrates.
4. Surfactants.

NOTE: ZORIAL RAPID 80 is not compatible with Treflan M.T.F. In addition, ZORIAL RAPID 80 may not always be compatible with other formulations of DNA herbicides. Always predetermine tank mix compatibility by mixing small proportional quantities in a quart jar or other small container. If after vigorous shaking there are large flakes, gel, sludge, or other signs of incompatibility, do not spray the combination. Always follow the order of addition given in the mixing instructions section of this label.

C. APPLICATION EQUIPMENT

Ground Application: Apply the recommended rate of ZORIAL RAPID 80 in 10 or more gallons of water per acre. Apply accurately with a fixed boom sprayer. Equip sprayer with 8002 to 8006 fan-jet nozzle tips or equivalent for broadcast application. Use 8002E to 8006E nozzle tips or equivalent for band applications. Use screen size 50 mesh or larger.

Be sure to calculate the correct amount of product per acre for band applications. Use the following formulas to determine the appropriate rate and volume per treated acre needed for band applications:

$$\begin{array}{rcl}
 \text{Band Width} & & \text{Broadcast} \\
 \text{in Inches} & \times & \text{Rate} \\
 \text{Row Width} & & \text{per treated acre} \\
 \text{in inches} & & = \text{Band Rate} \\
 & & \text{per planted acre}
 \end{array}$$

$$\begin{array}{rcl}
 \text{Band Width} & & \text{Broadcast} \\
 \text{in Inches} & \times & \text{Volume} \\
 \text{Row Width} & & \text{per treated acre} \\
 & & = \text{Band Volume} \\
 & & \text{per planted acre}
 \end{array}$$

in inches

Aerial Application: Apply the recommended rate of ZORIAL RAPID 80 in 5 or more gallons of water per acre. To minimize drift, use ZORIAL RAPID 80 with a drift control agent such as Nalco-Trol®. Do not apply during periods of gusty winds or winds in excess of 5 mph. Aerial spray equipment, flying speed and flying height should be carefully adjusted to provide a uniform application to the soil surface. Use markers to avoid overlapping and possible crop injury.

II. GENERAL COTTON, PEANUT AND SOYBEAN DIRECTIONS

Do not graze or feed cotton forage. Do not graze or harvest soybean forage or hay within 90 days of last ZORIAL RAPID 80 application.

LOCATION OF USE

ZORIAL RAPID 80 can be used for weed control in soybeans in the states of Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia. ZORIAL RAPID 80 can be used for weed control in all cotton producing states except California. ZORIAL RAPID 80 can be used for weed control in peanuts in the states of Alabama, North and South Carolina, Florida, Georgia, Texas, Oklahoma, New Mexico and Virginia.

A. APPLICATION INFORMATION

Mid South, Southeast and Texas (East of I-35)

ZORIAL RAPID 80 can be applied preplant incorporated, preemergence surface, or as a split application in areas with 35 inches or more annual rainfall. In areas with less than 35 inches rainfall, apply only as a preplant incorporated or split application unless irrigation is available for incorporation. ZORIAL RAPID 80 may be used in conventional or conservation (i.e. no-till, reduced till) tillage systems.

Texas (West of I-35), Southwest Oklahoma and New Mexico

ZORIAL RAPID 80 may be used in conventional or conservation tillage cotton systems only in areas with not more than 60% sand. ZORIAL RAPID 80 should only be applied as a preemergence application as part of a program in sequence with Prowl or Probe, or in combination with Caparol 4L

Arizona

ZORIAL RAPID 80 may be applied only as a preplant incorporated application. Light incorporation is required.

General Information

Preplant Incorporated Application (PPI) for cotton: Apply ZORIAL RAPID 80 at the recommended rate prior to planting. Incorporate within one week after application and not deeper than 2-3 inches.

Preemergence Surface Application (PRE) for cotton, soybeans and peanuts: Apply ZORIAL RAPID 80 at the recommended rate at the time of planting and preemergence to weeds. Do not apply when crop is at or near emergence. Emerged weeds must be controlled by tillage prior to application or tank mixing with a postemergence herbicide such as Gramoxone® or Roundup®.

Split Application - THE ZORIAL SPLIT™ for cotton and soybeans: First apply one half of the ZORIAL RAPID 80 rate preplant incorporated, then apply the remaining half of the ZORIAL RAPID 80 rate preemergence surface as recommended above.

The soil surface should be free of clods and existing weeds prior to application. Use tillage or a postemergence herbicide to control emerged weeds.

If replanting of cotton, peanuts or soybeans is necessary, a light reworking of the topsoil will retain the herbicidal activity of ZORIAL RAPID 80.

Crop Safety: If the cotton, peanuts or soybean plant is stressed during early development, application of ZORIAL RAPID 80 at the label rate may result in temporary bleaching or chlorosis of the leaves from which the plant will recover. Do not apply in areas with poor drainage.

WEEDS CONTROLLED

ZORIAL RAPID 80 Herbicide at recommended rates is effective for:

Controlling the following weeds:

- Anoda, Spurred (Cottonweed)
- Barnyardgrass
- Carpetweed
- Crabgrass
- Pusley, Florida
- Croton, Tropic
- Foxtails
- Goosegrass'
- Johnsongrass (seedling)
- Panicum spp.
- Pigweeds
- Purslane
- Sida, Prickly

- Anoda cristata
- Echinochloa crus-galli
- Mullugo verticillata
- Digitaria spp.
- Richardia scabra
- Croton glandulosus
- Setaria spp.
- Eleusine indica
- Sorghum halepense
- Panicum spp.
- Amaranthus spp.
- Portulaca oleracea
- Sida spinosa

Signalgrass
Velvetleaf

Brachiaria platyphylla
Abrutylon theophrasti

Suppressing the following weeds:

- Beggarweed, Florida
- Bermudagrass
- Cocklebur, Common
- Johnsongrass (rhizome)
- Kochia
- Mallow, Venice
- Morningglory
- Nutsedge (Yellow and Purple)
- Ragweed, Common
- Sage, Lanceleaf (Mintweed)
- Senna, Coffee
- Sesbania, Hemp
- Sicklepod
- Smartweed, Pennsylvania
- Spurge, Spotted
- Thistle, Russian

- Desmodium tortuosum
- Cynodan dactylon
- Xanthium strumarium
- Sorghum halepense
- Kochia scoparia
- Hibiscus trionum
- Ipomoea spp.
- Cyperus esculentus
- C. rotundus
- Ambrosia artemisiifolia
- Salvia retroflexa
- Cassia occidentalis
- Sesbania exaltata
- Cassia obtusifolia
- Polygonum pensylvanicum
- Euphorbia maculata
- Salsola iberica

¹ Including DNA resistant goosegrass.

III. SPECIFIC COTTON DIRECTIONS

The specific Directions for Use of ZORIAL RAPID 80 are given below for each geographic region of use (see Section I. for description of geographic regions). Select the rate of ZORIAL RAPID 80 to be used based on soil texture and application type within each geographic region from the sections listed below. Follow the Special Direction sections for specific recommendations and precautions.

Special Directions for the Mid South, Southeast, and Texas (East of I-35).

BROADCAST RATES IN POUNDS OF ZORIAL RAPID 80 PER ACRE¹

SOIL TEXTURE	PPI	PRE	SPLIT	
			PPI	PRE
clay loam, silty clay loam, silty clay, clay	2.5	2.5	1.25	1.25
loam, silty loam, silt, sandy clay loam, sandy clay	1.9	1.9	0.95	0.95
Coastal Plains Soils (Southeastern States)	1.25 ²	1.9 ²	0.95 ²	0.95 ²
sand, loamy sand, sandy loam	1.25	1.25	0.625	0.625

¹ Rates shown are for broadcast or treated acres. Be sure to adjust amount of product per planted acre if using a band application (See section I-C).

² Higher recommended rates are listed for improved control on coarse textured Coastal Plains soils of Southeastern States.

³ Do not use rates higher than 1.25 lbs. PPI on coarse textured Coastal Plains Soils of Southeast.

Special Directions for Texas (West of I-35), Southwest Oklahoma and New Mexico:

BROADCAST RATES IN POUNDS OF ZORIAL RAPID 80 PER ACRE¹

SOIL TEXTURE	PRE
FINE	
clay loam, silty clay loam, silty clay, clay	0.6-1.0 ²
MEDIUM	
loam, silty loam silt, sandy clay loam, sandy clay	0.6-1.0 ²
COARSE	
sandy loam	0.6

¹ Rates shown are for broadcast or treated acres. Be sure to adjust amount of product per planted acre when using a band application (See section I-C).

² Applications must be made on a 10 to 14" band for ZORIAL RAPID 80 rates above 0.6 lbs/A. The 0.6 lb/A rate may be applied as a banded or broadcast application.

Visual symptoms of injury (loss of pigment [whitening] in the leaf veins) and stand reduction may occur in rotational crops of soybeans or peanuts in Texas (West of I-35), Southwest Oklahoma and New Mexico planted within 16 months following the last ZORIAL RAPID 80 application.

At the recommended rates for this geographic region, ZORIAL RAPID 80 should be applied preemergence in a tank mix with approved herbicides in order to give an adequate spectrum of weed control. ZORIAL RAPID 80 should be applied alone only at the 1.0 lb/A rate and only as a sequential overlay following a PPI treatment of Prowl or Treflan. See below for tank mix options.

Shallow incorporation with finger tines on the planter (scratch incorporation) at planting is recommended for all banded preemergence ZORIAL RAPID 80 applications.

Rotate only to cotton, soybean or peanuts within the first 16 months after the last application.

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Do not use on soil with greater than 60% sand content. Do not use on cotton planted in furrow bottom. Do not use or on glandless cotton varieties. Do not use in Gaines County, Texas.

Special Directions for Arizona

ZORIAL RAPID 80 may be applied in a preplant incorporated (PPI) program for added suppression of nutsedge and morningglory. Do not apply ZORIAL RAPID 80 as a preemergence or spilt application.

BROADCAST RATES IN POUNDS OF ZORIAL RAPID 80 PER ACRE

SOIL TEXTURE	PPI
FINE	
clay loam, silty clay loam, silty clay, clay	1.25
MEDIUM	
loam, silty loam silt, sandy clay loam, sandy clay	0.95
COURSE	
sand, loamy sand, sandy loam	0.625

Shallow incorporation to a depth of 1-2" is required. Seed placement must be below incorporation zone.

ZORIAL RAPID 80 can be tank mixed with CAPAROL 4L, Treflan or Prowl as part of a PPI program. Follow labels of tank mix herbicide for specific rate recommendations, timing and use precautions.

Failure to observe these directions may result in temporary whitening of cotton or stand thinning.

In Arizona, treated acreage must only be rotated to cotton.

Special Directions for Conservation Tillage Programs:

ZORIAL RAPID 80 may be used in conservation tillage programs such as no till, minimum till or reduced till. The following additional directions should be followed to avoid crop injury and obtain optimum weed control with ZORIAL RAPID 80 in conservation tillage programs:

- Do not use in Texas (West of I-35), southwest Oklahoma and New Mexico in conservation tillage programs where the soil is greater than 60% sand.
- Use a postemergence herbicide such as Gramoxone or Roundup prior to application of ZORIAL RAPID 80, or tankmix with ZORIAL RAPID 80 with these products, to control emerged weeds.
- Any cover crop must be killed using an appropriate postemergence herbicide prior to planting. Poor weed control may result if the cover crop is incompletely killed or excessive plant debris is present when ZORIAL RAPID 80 is applied.
- Cotton seed should be planted at least 1" deep using a planter having a bubble or ripple type coulter with a straight leading edge and press wheel (a fluted coulter should not be used). The seed must be covered with at least 1" of soil following the planter press wheel. Avoid situation where water will pond over the seed row. Crop injury will occur if seed is not adequately covered with soil or water ponds over the seed row.

IV. ZORIAL RAPID 80 COMBINATIONS IN COTTON

ZORIAL RAPID 80 herbicide tank mix or overlay combinations approved for cotton are Bladex®, fluometuron (Cotoran®, Meturon®), Gramoxone®, Lorox®, Probe®, Prowl®, Roundup and trifluralin (Treflan®, Trilin®), Caparol®. Read and follow mixing instructions listed in section I-B. Follow labels of tank mix herbicide for specific rate recommendations, timing and use precautions.

ZORIAL RAPID 80 plus PROBE® or Caparol 4L Tank Mix:
Special Preemergence Tankmix for Improved Suppression of Annual Morningglory, Lanceleaf Sage, Prairie Sunflower, Annual Black Nightshade, and Nutsedge.

Areas of Texas (West of I-35), Southwest Oklahoma, and New Mexico.

Observe all precautions listed under Special Directions for Areas of Texas (West of I-35), southwest Oklahoma, and New Mexico. Do not use ZORIAL RAPID 80 tank mix as a PPI or split application. Do not apply in Gaines County, Texas.

ZORIAL RAPID 80 BROADCAST TANK MIX RATE PER TREATED ACRE¹

SOIL TEXTURE ²	ZORIAL RAPID 80 ¹ (lbs/A)	PROBE Herbicide ² (lbs/A)	ZORIAL RAPID 80 (lbs/A)	CAPAROL 4L ³ (pts/A)
FINE				
silty clay loam, clay loam, silty clay, and clay	0.6	+ 1.5 - 2.0	0.6 - 1.0	+ 2.4
MEDIUM				
loam, silt loam, silt, sandy clay loam, and sandy clay	0.6	+ 1.5	0.6 - 1.0	+ 2.4
COARSE				
sand and loamy sand	Do not use		Do not use	
sandy loam	0.6	+ 1.5	Do not use	

¹ Applications must be made on a 10 to 14" band for ZORIAL RAPID 80 rates above 0.6 lbs/A. The 0.6 lb/A rate may be applied as a banded or broadcast application. Rates shown are for tank mix broadcast (treated) acres. Be sure to adjust amount of product per planted acre when using a band application (See section I-C).

² PROBE herbicide is not recommended for soils containing more than 4% organic matter. Do Not Use ZORIAL RAPID 80 tank mix with PROBE Herbicide on soils containing more than 60% sand.

Do Not Use ZORIAL RAPID 80 tank mix with CAPAROL 4L on soils containing more than 50% sand.

These combinations may be tank mixed with Prowl and applied preemergence, or applied as a sequential overlay following a trifluralin or Prowl application. Shallow incorporation with finger tines on the planter (scratch incorporation) at planting is recommended for all banded preemergence Zorial Herbicide tankmix combinations.

Areas of the Mid South, Southeast, and Texas (East of I-35) and Arizona.

ZORIAL RAPID 80 may also be tank mixed with Caparol in areas of the Mid South, Southeast and Texas (East of I-35), and Arizona. Note: Caparol has special restrictions as regards soil type. Carefully read and observe all the Directions for Use, precautions, limitations on the Caparol label.

V. SPECIFIC SOYBEAN DIRECTIONS

Soybeans should be planted to a depth of 1-2 inches and soil firmly packed above and around the seed bed.

Do not use in sand, loamy sand, or sandy loam soils, except in the Coastal Plains area of the Southeast (Do not use PPI or split treatments for soybeans in the Coastal Plains area). In other areas, do not use the PPI treatment for soybeans unless as part of the split application treatment. Do not use in soybeans in Texas (West of I-35) or southwest Oklahoma or New Mexico.

BROADCAST RATES IN POUNDS OF ZORIAL RAPID 80 PER ACRE¹

SOIL TEXTURE	PRE	SPLIT	
		ppi	pre
clay loam, silty clay loam, silty clay, clay	2.5	1.25	1.25
loam, silty loam, silt, sandy clay loam, sandy clay	1.9	0.95	0.95
Coastal Plains Soils (Southeastern States)	1.25	Do not use	

¹ Rates shown are for broadcast or treated acres. Be sure to adjust amount of product per planted acre if using a band application (See section I-C).

Tank mix or overlay combinations may provide improved control of hard to control broadleaf weeds. See combination sections for specific recommendations.

VI. ZORIAL RAPID 80 COMBINATIONS IN SOYBEANS

Approved ZORIAL RAPID 80 tank mix or overlay combinations for soybeans include acifluorfen (Blazer[®], Tackle[®]), alachlor (Lasso[®]), Basagran[®], Canopy[®], Classic[®], Dual[®], Gramoxone, Lorox, metribuzin (Lexone[®], Sencor[®]), Prowl, Roundup, Scepter[®], Storm[®] and trifluralin (Treflan, Trilin). See tank mix product label for recommended rate, application timing and precautions. Read and follow mixing instructions in section I-B.

Special recommendations for certain ZORIAL RAPID 80 combinations are as follows:

ZORIAL RAPID 80 plus Scepter or Canopy Preemergence Tank Mix

These combinations can be used alone PRE or as part of the SPLIT application. They are especially recommended for improved control of cocklebur, annual morningglories, hemp sesbania, sicklepod, smartweeds and common ragweed.

Apply a tankmix of ZORIAL RAPID 80 plus Scepter or Canopy preemergence at the rate per treated acre listed in the following table. Refer to respective Scepter or Canopy label for specific directions, rates and restrictions.

Broadcast Product Use Rates

SOIL TEXTURE	ZORIAL RAPID 80 lbs/Acre	Scepter pints/Acre	Canopy ounces/Acre
Mississippi Delta only (fine textured soil)	1.25 - 1.50* - 1.90	See Scepter or Canopy for specific rates	
clay loam, silty clay loam, silty clay, clay	1.25 - 1.50* - 1.90		
loam, silty loam, silt, sandy clay loam, sandy clay	1.25 - 1.50		
Coastal Plains Soils (Coarse Texture Soils-SE)	1.25		

* optimum rate

ZORIAL RAPID 80 Preemergence plus Scepter or Classic

Postemergence Overlay

Postemergence overlay treatments of Classic or Scepter following ZORIAL RAPID 80 preemergence are recommended for increased control of problem broadleaf weeds such as cocklebur and annual morningglories. Apply ZORIAL RAPID 80 preemergence or as a Split application at the combination rates listed above. Apply Scepter or Classic at the proper rate and postemergence timing as directed by its respective use directions. Refer to overlay product label for specific use directions and restrictions.

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ZORIAL RAPID 80 plus Sencor or Lexone Preemergence Tank Mix

This combination is recommended for improved control of hemp sesbania, common ragweed and Venice mallow and other broadleaf weeds.

Apply a tank mix of ZORIAL RAPID 80 plus Sencor or Lexone preemergence surface at the rates per acre (broadcast) recommended in the following table. These rates represent optimum ZORIAL RAPID 80 rates and 1/2 of the normal metribuzin rate. Use the metribuzin use rates (grower use rates) most applicable to local soil type and growing conditions.

SOIL TEXTURE	ZORIAL RAPID 80 lbs/Acre	Sencor DF/ Lexone DF lbs/acre		
		less than 2% OM	2-4% OM	over 4% OM
Mississippi Delta only (fine textured soil)	1.25 - 1.50* - 1.90	0.50 - 1.0	0.50-1.17	0.665-1.33
clay loam, silty clay loam, silty clay, clay	1.25 - 1.50* - 1.90	0.33-0.66	0.425-1.0	0.50-1.17
loam, silty loam, silt, sandy clay loam, sandy clay	1.25 - 1.50	0.25-0.66	0.33-0.50	0.425-1.0
Coastal Plains Soils (Coarse Texture Soils-SE)	1.25	Do not use	0.25-0.50	0.33-0.66

* optimum rate

When using Sencor 4 or Lexone 4L convert to equivalent rates. The amount of Sencor DF or Lexone DF equals two thirds the amount of Sencor 4 or Lexone 4L. For example, one pint of Sencor 4 or Lexone 4L equals 2/3 pound Sencor DF or Lexone DF.

Refer to the ZORIAL RAPID 80 and Sencor or Lexone labels for further directions and precautions.

VI. SPECIFIC PEANUT DIRECTIONS

For use only in the states of Alabama, North Carolina and South Carolina, Florida, Georgia, Texas, Oklahoma, New Mexico and Virginia on 'Florunner' variety peanut. Do not use ZORIAL RAPID 80 in other states on peanut or on varieties other than 'Florunner'.

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USE PRECAUTIONS

Mixers, loaders and applicators must wear long-sleeved shirt and long pants, waterproof gloves, coveralls and shoes plus socks.

Read and follow all label directions for use for other herbicides used in either sequential applications or as tank mix partners with Zorial Rapid 80 for specific rate recommendations, application timing and precautions.

Do not use on peanuts that were treated pre-plant incorporated with Vernam as crop injury will result. Do not apply ZORIAL RAPID 80 when peanuts are near cracking, at cracking or emerged as crop injury may result. Do not apply ZORIAL RAPID 80 pre-plant incorporated in peanuts. Make only one application per year.

Delaying applications of post-emergence herbicides such as Starfire may be advisable if severe crop whitening is observed (greater than 50%). Do not apply in areas with poor drainage.

While ZORIAL RAPID 80 will control many grasses (see Section II "Weeds Controlled") it will not control Texas panicum at the rates and conditions recommended for use on peanuts.

ZORIAL RAPID 80 will control certain grass and broadleaf weeds when applied preemergence in peanuts (see Section II Weeds controlled). ZORIAL RAPID 80 is especially useful for control of Florida beggarweed when in weed control programs that utilizes both preemergence and postemergence herbicides.

Apply as a preemergence surface application immediately after planting and before weeds emerge.

Application of ZORIAL RAPID 80 to freshly tilled soil will give optimum weed control with crop safety. However, if weeds are emerged at the time of application, use a suitable burndown agent such as Starfire (paraquat) to control emerged weeds.

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Temporary whitening of the leaves may occur during normal use of ZORIAL RAPID 80. If the peanut plant is not stressed by adverse environmental factors or disease, the symptoms should dissipate within 4 to 6 weeks after planting. Under normal use conditions, early season whitening of peanuts from ZORIAL RAPID 80 does not result in significant crop stunting, stand reduction or yield loss. High levels of seedling disease, adverse environmental stress or improper application may result in increased levels of crop whitening or injury.

Broadcast Rate:

East of the Mississippi River:

1.5 - 1.8 lbs. ZORIAL RAPID 80 per treated acre.

(Apply preemergence only)

West of the Mississippi River:

0.5 lbs. ZORIAL RAPID 80 per treated acre

(Apply preemergence only)

Use the higher recommended rate when ZORIAL RAPID 80 is used alone or on finer textured soils, or where populations of susceptible weeds are very heavy. Use of rates higher than 0.5 lbs. ZORIAL RAPID 80 West of the Mississippi river will result in crop injury and are not recommended.

VII. SEQUENTIAL APPLICATIONS/TANK MIXES IN PEANUTS

ZORIAL RAPID 80 can be applied as a sequential overlay treatment following a pre-plant incorporated application of Balan, Sonalan, Prowl, or Dual. Do not apply ZORIAL RAPID 80 to peanuts that have been treated with Vernam®.

ZORIAL RAPID 80 tank mixes with Lasso and Dual will increase preemergence control of the difficult to control species such as Florida beggarweed and will broaden the spectrum of species controlled. ZORIAL RAPID 80 may be applied as a preemergence tank mix with Lasso and/or Dual.

Under most conditions, a burndown application of Starfire (or tank mixes of Starfire and Basagran) applied early postemergence will improve residual control of Florida beggarweed obtained with ZORIAL RAPID 80 by removing Florida beggarweeds that germinated or emerged prior to the activation of ZORIAL RAPID 80.

Sequential applications of Classic, Pursuit and Butoxone (2,4DB) may be used following ZORIAL RAPID 80 to control tolerant weeds.

STORAGE AND DISPOSAL

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

Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal law. If waste cannot be disposed of by use of label instructions, contact your state pesticide or environmental control agency or hazardous waste representative at the nearest EPA Region Office for guidance.

Container Disposal: Completely empty and triple rinse container into application equipment. Then dispose of empty container in a sanitary landfill or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.



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ZORIAL RAPID 80®

SUPPLEMENTAL LABELING

For Preemergence Weed Control In "Florunner" Variety Peanuts Only
EPA Reg. No. 55947-77

(For use only in the States of Alabama, North Carolina and South Carolina, Florida, Georgia, Texas, Oklahoma, New Mexico and Virginia.)

DIRECTIONS FOR USE

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

USE PRECAUTIONS

Mixers, loaders and applicators must wear long-sleeved shirt and long pants, waterproof gloves, coveralls and shoes plus socks.

Read and follow all label directions for use for other herbicides used in either sequential applications or as tank mix partners with Zorial Rapid 80® for specific rate recommendations, application timing and precautions.

Do not use on peanuts that were treated pre-plant incorporated with Vernam® as crop injury will result. Do not apply ZORIAL RAPID 80® when peanuts are near cracking, at cracking or emerged as crop injury may result. Do not apply ZORIAL RAPID 80® pre-plant incorporated in peanuts. Make only one application per year.

Delaying applications of post-emergence herbicides such as Starfire® may be advisable if severe crop whitening is observed (greater than 50%). Do not apply in areas with poor drainage.

While ZORIAL RAPID 80® will control many grasses (see Section II of Zorial Rapid 80® label "Directions for Use"), it will not control Texas panicum at the rates and conditions recommended for use on peanuts.

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

IMPORTANT

Before using this product, read and carefully observe all applicable directions, restrictions, and precautionary statements on the container label and the Directions for Use booklet accompanying the ZORIAL RAPID 80® container.

ACCEPTED
with COMMENTS
in EPA Letter Dated

JUN 24 1993

Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.
55947-77

APPLICATION DIRECTIONS

ZORIAL RAPID 80[®] will control certain grass and broadleaf weeds when applied preemergence in peanuts (see Section II of ZORIAL RAPID 80[®] label for weeds controlled). ZORIAL RAPID 80[®] is especially useful for control of Florida beggarweed when in weed control programs that utilizes both preemergence and postemergence herbicides.

Apply as a preemergence surface application immediately after planting and before weeds emerge.

Application of ZORIAL RAPID 80[®] to freshly tilled soil will give optimum weed control with crop safety. However, if weeds are emerged at the time of application, use a suitable burndown agent such as Starfire[®] (paraquat) to control emerged weeds.

Temporary whitening of the leaves may occur during normal use of ZORIAL RAPID 80[®]. If the peanut plant is not stressed by adverse environmental factors or disease, the symptoms should dissipate within 4 to 6 weeks after planting. Under normal use conditions, early season whitening of peanuts from ZORIAL RAPID 80[®] does not result in significant crop stunting, stand reduction or yield loss. High levels of seedling disease, adverse environmental stress or improper application may result in increased levels of crop whitening or injury.

BROADCAST RATE:

- East of the Mississippi River: 1.5 - 1.8 lbs. ZORIAL RAPID 80[®] per treated acre (Apply preemergence only)
- West of the Mississippi River: 0.5 lbs. ZORIAL RAPID 80[®] per treated acre (Apply preemergence only)

Use the higher recommended rate when ZORIAL RAPID 80[®] is used alone or on finer textured soils or where populations of susceptible weeds are very heavy. Use of rates higher than 0.5 lbs. ZORIAL RAPID 80[®] West of the Mississippi river will result in crop injury and is not recommended.

SEQUENTIAL APPLICATIONS/TANK MIXES IN PEANUTS

ZORIAL RAPID 80[®] can be applied as a sequential overlay treatment following a pre-plant incorporated application of Balan[™], Sonalan[™], Prowl[®], or Dual[®]. Do not apply ZORIAL RAPID 80[®] to peanuts that have been treated with Vernam[®].

ZORIAL RAPID 80[®] tank mixes with Lasso[®] and Dual[®] will increase preemergence control of the difficult to control species such as Florida beggarweed and will broaden the spectrum of species controlled. ZORIAL RAPID 80[®] may be applied as a preemergence tank mix with Lasso[®] and/or Dual[®].

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Under most conditions, a burndown application of Starfire® (or tank mixes of Starfire® and Basagran®) applied early postemergence will improve residual control of Florida beggarweed obtained with ZORIAL RAPID 80® by removing Florida beggarweeds that germinated or emerged prior to the activation of ZORIAL RAPID 80®.

Sequential applications of Classic®, Pursuit® and Butoxone® (2,4DB) may be used following ZORIAL RAPID 80® to control tolerant weeds.

THIS LABELING MUST BE IN THE POSSESSION OF THE USER AT THE TIME OF APPLICATION.

Registrant: Sandoz Agro, Inc.
1300 East Touhy Avenue
Des Plaines, Illinois 60018

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June 1993

