

Zoridal[®]

FLOWABLE HERBICIDE

FOR CONTROL OF GRASS AND BROADLEAF WEEDS IN COTTON AND SOYBEANS

ACTIVE INGREDIENT:

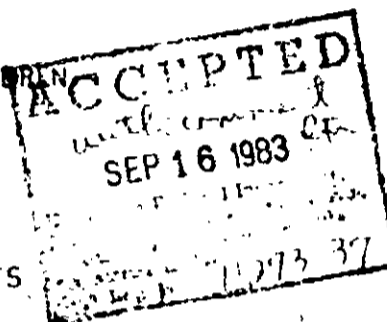
norflurazon [4-chloro-5-(methylamino)-2-(alpha, alpha, alpha-trifluoro-p-tolyl)-3(2H)-pyridazinone]...	56.7%
INERT INGREDIENTS:.....	43.3%
	<u>100.0%</u>

(1 gallon contains 6 lbs. of norflurazon)

KEEP OUT OF REACH OF CHILDREN

CAUTION

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS
AND DOMESTIC ANIMALS



CAUTION: Causes moderate eye irritation. Avoid contact with skin. Wash thoroughly with soap and water after handling.

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

ENVIRONMENTAL HAZARDS

Do not apply directly to any body of water. Do not apply when weather conditions favor runoff or drift from treated areas. Do not contaminate water by cleaning of equipment or disposal of wastes.

NOTICE: Sandoz, Inc. makes no warranty, expressed or implied, including the warranties of merchantability and/or fitness for any particular purpose concerning this material, except those which are contained on this label.

LOCATION OF USE

For use in cotton and soybeans in the states of Alabama, Arkansas, Illinois, North Florida, Georgia, Kentucky, Louisiana, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia.

NET WT. Gal.

EPA Reg. No. 11273-37

SANDOZ, Inc., Crop Protection
420 Camino Del Rio S., San Diego, California 92108

If replanting of cotton or soybeans is necessary, a light reworking of the topsoil will retain the herbicidal activity of Zorial.

Peanuts can be planted as a replacement crop 30 days after Zorial application. Prior to planting, a light reworking of the topsoil is recommended to remove existing plant material and to retain herbicidal activity.

Do not graze treated cotton fields with livestock or feed treated cotton forage to livestock. Cover crops planted after harvest should be plowed under and not grazed or harvested. To minimize injury to small grain cover crops, they should be broadcast planted rather than drilled.

Quantity of Zorial applied in any one year must not exceed the broadcast rate in pounds per acre for a given soil type.

For one year following Zorial application, treated acreage may only be rotated to cotton, soybeans, and peanuts.

COMPATIBILITY: - Zorial has been found compatible with those DVA-type herbicides registered for use in cotton and soybeans and with metribuzin when used in soybeans. Zorial is also compatible with other PPI herbicides, soil insecticides and seed treatments commonly used in cotton and soybeans.

CROP SAFETY: If the cotton or soybean plant is stressed during early development, application of Zorial at the label rate may result in temporary bleaching or chlorosis of the leaves from which the plant will recover.

APPLICATION DIRECTIONS

Apply the recommended rate of Zorial in 10-20 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 10 mesh or larger.

Preplant incorporated application (PII): Apply Zorial at the recommended rate from 30 days to just prior to planting. In west Texas and Southwest Oklahoma, Zorial may be applied up to 60 days prior to planting. Incorporate not deeper than 2-3 inches with commonly used equipment. Incorporation should occur within one week after application.

Preemergence surface application (PEF): Apply Zorial at the recommended rate at the time of planting and preemergence to weeds.

Split application - (PII/PEF): Apply Zorial preplant incorporated, as indicated above, at one-half the recommended rate. Apply the other half preemergence surface as recommended above.

SOIL INCORPORATION

Do not use a harrow or other soil treatment which will destroy the soil type in sand, loam, or silt. Do not use a harrow or other soil treatment unless as part of the tillage system. Do not use a harrow or other soil treatment to a depth of 1-2 inches and soil type should be ascertained at the time of application.

WEEDS CONTROLLED

Zorial herbicide at recommended rates is effective for:

A. Controlling the following weeds in cotton or soybeans:

Barnyardgrass	Carpetweed
Crabgrass	Cocklebur
Foxtail	Florida Pusley
Goosegrass	Morningglory
Signalgrass	Pennsylvania Smartweed
Panicum spp.	Pigweeds
Johnsongrass (seedling)	Prickly Sida
	Purslane
	Sicklepod
	Spotted Spurge
	Spurred Anoda (cottonweed)
	Velvetleaf

1. "TRIAL SPLIT" in cotton only

B. Suppressing the following weeds in cotton or soybeans:

Bermudagrass	Cocklebur
Johnsongrass (rhizome)	Hemp Sesbania
Nutsedge (yellow and purple)	Kochia
	Lanceleaf sage (mintweed)
	Morningglory
	Ragweed
	Russian thistle
	Other Smartweeds
	Venice mallow

DIRECTIONS FOR USE

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

GENERAL INFORMATION

Zorial is a herbicide for control of certain grasses and broadleaf weeds in cotton and soybeans. Apply Zorial before weeds emerge. Zorial can be applied preplant incorporated, preemergence surface, or as a split application in areas with 40 inches or more annual rainfall. In areas with less than 40 inches rainfall, apply as a preplant incorporated or split application only. Zorial when applied pre or in a split application will provide adequate control of all specified annual grasses; therefore, a preemergence DNA-type herbicide is not required.

The soil surface should be free of clods and visible weeds prior to application.

Broadcast rates in quarts of Zorial Flowable per acre:

SOIL TYPE	PRE	Split	
		ppi	pre
loam, silty loam, silt, sandy clay loam	1	1/2	1/2
sandy clay, clay loam, silty clay loam, silty clay, clay	1 1/3	2/3	2/3

COTTON INFORMATION

Broadcast rates in quarts of Zorial Flowable per acre:

SOIL TYPE	PPI	PRE	Split	
			ppi	pre
sand, loamy sand, sandy loam	2/3	2/3	1/3	1/3
loam, silty loam, silt, sandy clay loam	1	1	1/2	1/2
sandy clay, clay loam, silty clay loam, silty clay, clay	1 1/3	1 1/3	2/3	2/3

West Texas and Southwest Oklahoma Only: Prior to application of Zorial, completely destroy the weed beds of the previous year by "cross-discing". Apply Zorial PPI only. To prevent removal of the herbicide application by wind, immediate incorporation is recommended. Soybeans can be planted as a replacement crop 45 days after the first planting of cotton. Do not plant peanuts as a replacement crop. Do not use Zorial on furrow planted cotton or on glandless cotton varieties. Do not use on sand or loamy sand soils with greater than 70% sand content.

Band Treatment: when applying a band treatment of Zorial flowable the following formula may be used to calculate the amount per acre:

$$\frac{\text{Band width in inches} \times \text{Rate in qts. per acre}}{\text{Row width in inches}} = \text{broadcast treatment for band treatment}$$

MIXING INSTRUCTIONS: Clean and calibrate the sprayer. Fill the spray tank with one-half the required amount of clean water and add the recommended amount of Zorial flowable while maintaining agitation. Apply the agitator contactor and add all rinseate to spray tank. Maintain agitation while filling and spraying. If a three-phase line is used, discharge at the bottom of the tank to minimize foaming.

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

P. Michael Schroeder
Sandoz, Inc.
Crop Protection
480 Camino de Rio South
San Diego, CA 92108

SEP 16 1983

Dear Mr. Schroeder:

Subject: Justification for not conducting
an acute Inhalation LC₅₀ study
Zorbal Flowable Herbicide (Amendment Releting Aerial Application)
EPA Registration No. 11273-37
Solicam Flowable Herbicide
EPA Registration No. 11273-39
Your Submission of September 6, 1983

The amendment referred to above and justification for not conducting an inhalation test submitted in connection with registration under FIFRA are acceptable, provided that you:

1. Make the labeling changes listed below for both listed products before you release the products for shipment bearing the amended labeling:

- a. Add the statement:

Do not apply with aerial equipment.

We require this statement because your waiver request is based, in part, on use of specific types of application equipment. Under Section 2(ee)(3) of the FIFRA, a user may employ any application equipment not specifically prohibited in the labeling.

2. Submit one (1) copy of your final printed labeling before you release the product for shipment.

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

Sincerely yours,

Richard F. Mountfort *RFM*
Product Manager (23)
Fungicide-Herbicide Branch
Registration Division (75-767)

Enclosure

RD: MOUNTFORT: DCR-25915: WAG-039EC: JM: Raven: 479-2013: 9/15/83

ZORIAL[®]

FLOWABLE HERBICIDE

55947-71

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INERT INGREDIENTS:..... 43.3%
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CAUTION

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS
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ACCEPTED
with comment
SEP 16 1983
11273-37

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CROP SAFETY: If the cotton or soybean plant is stressed during early development, application of Zorial at the label rate may result in temporary bleaching or chlorosis of the leaves from which the plant will recover.

APPLICATION DIRECTIONS

Apply the recommended rate of Zorial in 10-20 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.

Preplant incorporated application (PPI): Apply Zorial at the recommended rate from 30 days to just prior to planting. In West Texas and Southwest Oklahoma, Zorial may be applied up to 60 days prior to planting. Incorporate not deeper than 2-3 inches with commonly used equipment. Incorporation should occur within one week after application.

Preemergence surface application (PRE): Apply Zorial at the recommended rate at the time of planting and preemergence to weeds.

Split application - THE ZORIAL SPLIT™: Apply Zorial preplant incorporated, as indicated above, at one half the recommended rate. Apply the other half preemergence surface as recommended above.

SOYBEAN INFORMATION

Do not use in soybeans in West Texas or Southwest Oklahoma. Do not use when the soil type is sand, loamy sand, or sandy loam. Do not use the PPI treatment in soybeans unless as part of the split application treatment. Soybeans should be planted to a depth of 1-2 inches and soil firmly packed above and around the seed bed.

Broadcast rates in quarts of Zorial Flowable per acre:

<u>SOIL TYPE</u>	<u>PRE</u>	<u>Split</u>	
		<u>ppi</u>	<u>pre</u>
loam, silty loam, silt, sandy clay loam	1	1/2	1/2
sandy clay, clay loam, silty clay loam, silty clay, clay	1 1/3	2/3	2/3

COTTON INFORMATION

Broadcast rates in quarts of Zorial Flowable per acre:

<u>SOIL TYPE</u>	<u>PPI</u>	<u>PRE</u>	<u>Split</u>	
			<u>ppi</u>	<u>pre</u>
sand, loamy sand, sandy loam	2/3	2/3	1/3	1/3
loam, silty loam, silt, sandy clay loam	1	1	1/2	1/2
sandy clay, clay loam, silty clay loam, silty clay, clay	1 1/3	1 1/3	2/3	2/3

West Texas and Southwest Oklahoma Only: Prior to application of Zorial, completely destroy the weed beds of the previous year by "cross-discing". Apply Zorial PPI only. To prevent removal of the herbicide application by wind, immediate incorporation is recommended. Soybeans can be planted as a replacement crop 45 days after the first planting of cotton. Do not plant peanuts as a replacement crop. Do not use Zorial on furrow planted cotton or glandless cotton varieties. Do not use on sand or loamy sand (soils with greater than 70% sand content).

Band Treatment: When applying a band treatment of Zorial Flowable the following formula may be used to calculate the amount per acre:

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \text{Rate in qts. per acre broadcast treatment} = \text{quarts per acre for band treatment}$$

MIXING INSTRUCTIONS: Clean and calibrate the sprayer. Fill the spray tank with one-half the required amount of clean water and add the recommended amount of Zorial flowable, maintaining agitation. Triple rinse empty container and add all rinsate to spray tank. 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 spray mixture to remain in the spray tank overnight because settling could occur and resuspension would be difficult.

STORAGE AND DISPOSAL

Storage: Do not store near or contaminate feed or foodstuffs.

Pesticide Disposal: Pesticide, spray mixture, or rinse water that cannot be used according to label instructions must be disposed of according to applicable Federal, state, or local procedures.

Container Disposal: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or dispose of in a sanitary landfill, or by incineration if allowed by state and local authorities.

Nalco-Trol® is a registered trademark of Nalco Chemical Co.

Ortho-Trol® is a registered trademark of Chevron Chemical Co.