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RD REQUESTED COMPLETION DATE:

6-17-88

EEB ESTIMATED COMPLETION DATE:

6-17-88

RD ACTION CODE/TYPE OF REVIEW:

510

TYPE PRODUCT(S):

Fungicide

DATA ACCESSION NO(S):

PRODUCT MANAGER AND NO:

D. Stubbs (41)

PRODUCT NAME(S)

Botran 75W (DCNA)

COMPANY NAME:

Texas Department of Agriculture

SUBMISSION PURPOSE:

Proposed Section 18 for use on peanuts

SHAUGHNESSEY NUMBER

CHEMICAL AND FORMULATION

% A.I.

031301

2,6-Dichloro-4-nitroaniline

75

## ECOLOGICAL EFFECTS BRANCH REVIEW

BOTRAN 75W

### 100 SUBMISSION PURPOSE AND LABEL INFORMATION

#### 100.1 SUBMISSION PURPOSE AND PESTICIDE USE

The Texas Department of Agriculture has submitted an application for an Emergency Exemption under Section 18 of FIFRA for the use of Botran 75W<sup>TM</sup> on peanuts in order to control sclerotinia blight. According to the submission, a similar Emergency Exemption was requested in 1987. It is expected that, of the 250,000 acres of peanuts grown in Texas during the 1988 season, 100,000 acres will be treated. The counties included in the request are: Atascosa\*, Bastrop, Bexar, Brown, Callahan, Collingsworth, Comanche\*, Conley, Denton, Eastland\*, Erath\*, Fannin, Fayette, Frio\*, Gaines\*, Grayson, Hale, Harris, Hartley, Haskell\*, Hidalgo, Hill, Hood, Houston, Johnson, Lamar, Lasalle, Lee, Mason\*, Medina, McLennon, Montague, Motley, Parker, San Saba, Somervell, Stonewall, Terry, Waller, Wilson\*, Wise and Yokum\*. The major producing counties are starred.

Sclerotinia blight of peanuts is caused by the fungus Sclerotinia minor and is stimulated by high humidity and cool temperatures. Growers have had problems suppressing the blight with Rovral<sup>TM</sup>, which is registered for use on peanuts. The use of Botran 75W<sup>TM</sup> is intended to augment Rovral<sup>TM</sup> treatments.

The Exemption is requested for the 1988 growing season, with the first application being made when at least one percent of the peanut plants in a field are infected with sclerotinia fungus. The alternative is the currently-used Rovral<sup>TM</sup>, which is not as effective. Rovral<sup>TM</sup> will, however, be used after Botran<sup>TM</sup> treatment to protect uninfected peanut plants.

There are four alternatives to using Botran<sup>TM</sup>. They are: i) multi-year rotations using nonhost crops; ii) deep burial of crop residues; iii) utilization of Spanish varieties; and iv) maintenance of soil moisture below capacity during the last 45 days of production. The TDA maintains that these measures cannot be implemented because: i) in order to maintain peanut quotas, farmers cannot do multiple rotations; ii) deep burial of plant residues is economically unfavorable and leads to soil erosion; iii) Spanish-type peanuts are in less demand than Runner-type peanuts; and iv) irrigation manipulations will reduce the yield of peanuts.

#### 100.2 LABEL INFORMATION

A copy of the Botran 75W<sup>TM</sup> was not supplied in this submission. The following is excerpted from a Botran 75W<sup>TM</sup> label on file.

| <u>Ingredient</u>           | <u>Percent<br/>(w/w)</u> |
|-----------------------------|--------------------------|
| <u>Active:</u>              |                          |
| 2,6-Dichloro-4-nitroaniline | 75                       |
| <u>Inert Ingredients</u>    |                          |
|                             | 25                       |
| Total                       | 100                      |

### 100.3 APPLICATION METHODS, DIRECTIONS, RATES

The chemical will be applied at a rate of 3 pounds active ingredient per acre. It is possible that two applications will be made during the growing season. Botran™ will be applied either through overhead sprinkler systems, by ground spray using equipment capable of producing large droplets or by aircraft using equipment capable of producing large droplets. The maximum total amount of active ingredient expected to be used during the growing season is 600,000 pounds.

### 100.4 TARGET ORGANISM

Sclerotinia minor

### 100.5 PRECAUTIONARY LABELING

There were no environmental precautions supplied in this submission. The submission simply states that: "All applicable directions, precautions, and restrictions present on the EPA-registered Botran 75W label must be observed and followed."

## 101 HAZARD ASSESSMENT

### 101.1 DISCUSSION

Botran 75W™ is a fungicide that is currently registered on a variety of crops which include deciduous fruits and vegetables. It is not registered for use on peanuts. The State of Texas has requested Emergency Exemptions for use of this product to control disease in peanuts. The area of use is expected to be approximately 100,000 of the 250,000 acres of peanuts grown statewide. The State expects that farmers will use a total of 300,000 to 600,000 pounds of active ingredient during the growing season, depending on whether one or two applications are necessary. The requested duration of this exemption is until October 21, 1988.

## 101.2 LIKELIHOOD OF ADVERSE EFFECTS TO NONTARGET ORGANISMS

The submission states that the Texas Parks and Wildlife Department will not support the Emergency Exemption this year, just as it did not support last year's Emergency Exemption, because of concerns for endangered species and the lack of toxicity data on fish and wildlife.

In a letter from the U.S Fish and Wildlife Service (USFWS) in Houston, David L. Hankla, Field Supervisor, stated that, if a blight broke out, the Service would not object to the use of Botran<sup>TM</sup> in selected counties. He went on to say that 2,6-dichloro-4-nitroaniline is thought to be a nonspecific inhibitor of cell division and nuclear stability and its use could result in reduced reproduction due to damage to eggs or sperm. The recommendation of the USFWS is that Botran<sup>TM</sup> be used only in counties where sclerotinia blight occurs and not as a preventative measure. USFWS also recommends that every precaution be made to keep this chemical out of a flowing creek or river. A copy of the letter is attached.

### Terrestrial species

According to data in Ecological Effects Branch files, 2,6-Dichloro-4-nitroaniline is from slightly toxic to practically nontoxic to avian species on both an acute and subacute basis, depending on species. Thus, although some migratory birds may be exposed, EEB does not expect that there will be unacceptable adverse effects to those birds. This compound is practically nontoxic to mammals and honey bees. Therefore, EEB expects no hazard to terrestrial species from the use of Botran 75W<sup>TM</sup> on peanuts.

### Aquatic species

EEB aquatic data are incomplete; 2,6-Dichloro-4-nitroaniline is from highly toxic to moderately toxic to freshwater (LC50 = 1.08 ppm for bluegill sunfish and 0.56 ppm for rainbow trout). There are no data on the toxicity of this chemical to freshwater aquatic invertebrates.

In the submission, the Texas Department of Agriculture supplied some information (provided to them by Nor-Am Chemical Company) on the environmental fate of this chemical. It is stable to hydrolysis. It has low aqueous solubility (6.4 mg/L) and other data show that 2,6 dichloro-4-nitroaniline has a low potential for movement in soils.

An estimated environmental concentration in adjacent ecosystems due to runoff from treated fields may be calculated using an application rate of 3.0 pounds of active ingredient per acre, a 2 percent runoff, and the following formula:

$$\text{EEC} = \frac{(\text{A.R.}) (\text{RUNOFF}) (\text{DRAINAGE BASIN SIZE})}{(\text{P.S.}) (\text{P.D.}) (43560 \text{ SQ. FT./A}) (\text{WEIGHT OF WATER})}$$

Where: A.R. = Max. Application Rate of a.i. in pounds  
 RUNOFF = Percent runoff expressed in decimal form  
 DRAINAGE BASIN SIZE = 10 Acres  
 P.S. = POND SIZE IN Acres  
 P.D. = POND DEPTH in feet

$$\text{EEC} = \frac{(3.0 \text{ lb/A})(0.02)(10 \text{ A})}{(1 \text{ A})(6 \text{ ft.})(43560 \text{ sq.ft./A})(62.36 \text{ lb/cu. ft.})}$$

EEC = 37 parts per billion in adjacent aquatic systems

This concentration is approximately 1/15th the lowest fish LC50. EEB does not expect there to be an immediate hazard to fish under this Emergency Exemption. A hazard assessment cannot be made for freshwater aquatic invertebrates.

#### 101.3 ENDANGERED SPECIES CONSIDERATION

Botran is relatively nontoxic to avian and mammal species and therefore, it is not expected that there will be a "may effect" to resident or visiting avian species from this use. There are no federally-listed endangered or threatened aquatic or insect species known to reside in the counties in which this pesticide will be used.

#### 101.4 ADEQUACY OF THE TOXICITY DATA

A Registration Standard on 2,6-Dichloro-4-nitroaniline was published in December, 1983. The Company submitted a letter with this submission indicating that the studies required by that registration standard have been submitted. The data available are adequate to assess hazard for this Emergency Exemption.

#### 101.5 ADEQUACY OF LABELING

The following precautionary labeling should appear on the label:

"This pesticide is toxic to fish. Do not apply directly to water or wetlands. Do not apply where runoff is likely to occur. Do not apply when weather conditions favor drift from areas

treated. Do not contaminate water by cleaning of equipment or disposal of wastes."

102 CLASSIFICATION

NA

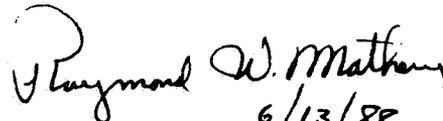
103 CONCLUSIONS

Ecological Effects Branch has reviewed the submission by the Texas Department of Agriculture for an Emergency Exemption for the use of Botran 75W (DCNA) on peanuts for control of sclerotinia fungus. EEB sees no increased risk to nontarget organisms from this use but agrees with the U.S. Fish and Wildlife Service that this pesticide should be used only to treat acute cases sclerotinia blight and not be used as a general prophylactic treatment. Further, care should be taken to avoid runoff to adjacent aquatic ecosystems.

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Ecological Effects Branch  
Hazard Evaluation Division (TS-769C)

  
4/13/88

Raymond W. Matheny, Head, Section 1  
Ecological Effects Branch  
Hazard Evaluation Division (TS-769C)

  
6/13/88

James W. Akerman, Chief  
Ecological Effects Branch  
Hazard Evaluation Division (TS-769C)

  
6/12/88



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE

DIVISION OF ECOLOGICAL SERVICES  
17629 EL CAMINO REAL, SUITE 211  
HOUSTON, TEXAS 77058  
May 9, 1988

Mr. Lemarcus B. Johnson  
Registration/Health and Environmental  
Monitoring Program  
Department of Agriculture  
P.O. Box 12847  
Austin, Texas 78711

RE: Specific Exemption for use of Botran 75W

Dear Mr. Johnson:

We appreciate your notice dated April 21, 1988 concerning the Texas Department of Agriculture's pending application for an exemption under Section 18 of FIFRA, of Botran 75W for use on peanuts in Texas. If the weather in 1988 is wet and cool in the peanut growing counties which could stimulate an outbreak of Sclerotinia blight, the U.S. Fish and Wildlife Service would not object to an exception for use of Botran 75W in selected counties.

Botran 75W is not acutely toxic to birds and mammals, but is highly toxic to fish and aquatic invertebrates. The mechanism of toxicity of this fungicide is thought to be a non-specific inhibitor of cell division and nuclear stability. This type of action would not be readily apparent in birds or mammals exposed to Botran 75W, but could result in reduced reproduction due to sperm or egg damage. The fact that it does not accumulate in rat tissue does not mean that it did not damage cellular components (i.e. nucleus, chromosomes).

Peanuts are produced in approximately 40 counties in Texas and this may lead to exposure of some migratory birds to Botran 75W. The U.S. Fish and Wildlife Service, in order to reduce undue exposure to fish and wildlife species, recommends that Botran 75W be used only in counties where Sclerotinia blight is detected and not as a preventive measure. A second recommendation is that, if Botran 75W is used, every precaution available be employed to insure Botran 75W does not enter a flowing creek or river.

We appreciate the opportunity to comment on your applications and trust our comments will be useful to you. If you have any questions please feel free to contact me or Dr. Brian Cain at 713-229-3681.

Sincerely,

David L. Hankla  
Field Supervisor

BC:vj

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