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

3/2/90

OFFICE OF
PESTICIDES AND TOXIC
SUBSTANCES

MEMORANDUM

Subject: Review of the submission for the registration of Accent herbicide.

From: James W. Akerman, Chief
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

To: Robert Taylor
Product Manager, PMT#25
Fungicide-Herbicide Branch
Registration Division (H7505C)

EEB has reviewed the proposed registration of 2-(( (( (4,6-Dimethoxypyrimidin-2yl) aminocarbonyl)) amino sulfonyl))-N,N-dimethyl-3-pyridinecarboxamide, monohydrate, trade named Accent, for the control of weeds in corn fields.

Data currently available indicate that the hazard to avian, aquatic and mammalian species will be minimal. EEB expects that the use of this herbicide will increase the hazard to nontarget plants including endangered or threatened species. There is no data on Accent's effect upon nontarget plants, but the registrant is currently doing studies as listed in the review.

EEB is unable to complete this review of the environmental hazards that will be created by Accent because of a lack of phytotoxicity data, especially aquatic phytotoxicity. The registrant should finish their phytotoxicity tests and submit them for review, then resubmit the request for registration.

Please contact Dr. James J. Goodyear at 557-7726 if you have any questions.

260279
Record No.

Review No.

129008
Shaughnessey No.

# EEB REVIEW

DATE: IN February 28, 1990 OUT March 2, 1990

FILE OR REG. NO. 352-LGU

PETITION OR EXP. NO.

DATE OF SUBMISSION February 22, 1990

DATE RECEIVED BY EFED February 27, 1990; by EEB March 1, 1990

RD REQUESTED COMPLETION DATA March 27, 1990

EEB ESTIMATED COMPLETION DATE March 27, 1990

RD ACTION CODE/TYPE OF REVIEW 101

TYPE PRODUCTS(S): I, D, H, F, N, R, S Herbicide

MRID NO(S).

PRODUCT MANAGER NO. Robert Taylor PM#25, Cynthia Giles

PRODUCT NAME(S) Accent

COMPANY NAME E.I. du Pont de Nemours & Company, Inc., Wilmington, DE 19898

SUBMISSION PURPOSE Clarification of required phytotoxicity data

| SHAUGHNESSEY NO. | CHEMICAL AND FORMULATION | % A.I. |
|---|---|---|
| 129008 | Accent TGAI | 75% |
| | | |
| | | |

260279
Record Numbers

129008
Shaughnessy No.

# REQUEST FOR REGISTRATION

# ACCENT

**TECHNICAL GRADE AND WATER DISPERSIBLE GRANULES.**

## 100. SUBMISSION PURPOSE AND LABEL INFORMATION:

### 100.1 SUBMISSION PURPOSE AND PESTICIDE USE:

*Applicant-* E.I. du Pont de Nemours & Company, Inc., Wilmington, DE 19898.

Purpose- Registration of Accent herbicide, water dispersible granule.

### 100.2 FORMULATION INFORMATION- Dispersible Granules

| | |
|---|---|
| Active ingredient- | |
| 2-(( (( (4,6-Dimethoxypyrimidin-2yl) aminocarbonyl)) aminosulfonyl))-N,N-dimethyl-3-pyridinecarboxamide, monohydrate | 75.0 % W/W |
| Inert Ingredients | 25.0 |
| | 100 % |

### 100.3 FORMULATION INFORMATION- Technical grade

| | |
|---|---|
| Active ingredient- | |
| 2-(( (( (4,6-Dimethoxypyrimidin-2yl) aminocarbonyl)) aminosulfonyl))-N,N-dimethyl-3-pyridinecarboxamide, monohydrate | 88.5 % W/W |
| Inert Ingredients | 11.5 |
| | 100 % |

### 100.4 APPLICATION METHODS, RATES AND DIRECTIONS FOR USE:

*Methods-* Accent herbicide is to be applied to young, actively growing weeds with ground equipment. The label does not mention aerial application, but specifically excludes any type of irrigation.

*Rates-* The listed rates vary from 2/3 oz to 1-1/3 oz ai per acre. It may be inferred that this rate is per season, but it is not specifically stated. For seedling Johnsongrass, Shattercane and other

annual grasses a "split-application" (*i.e.*, more than one application per crop) may be required, but the rate per application must be reduced to avoid exceeding the total application rate.

*Other Directions*- See the attached label for complete directions.

## 100.5 TARGET ORGANISMS:

See the attached label for a listing of the target grasses and broadleaf weeds.

## 100.6 PRECAUTIONARY LABELING:

ENVIRONMENTAL HAZARDS

Do not apply directly to water or wetlands (swamp, bogs, marshes, and potholes). Do not contaminate water by cleaning of equipment or disposal of wastes.

IMPORTANT

Injury to or loss of desirable trees or vegetation may result from failure to observe the following: Do not apply, or drain or flush equipment, on or near desirable trees or other plants, or on areas where their roots may extend, or in location where the chemical may be washed or moved into contact with their roots. Do not use on lawns, walks, driveways, tennis courts or similar areas. Prevent drift of spray to desirable plant. Do not contaminate any body of water. Thoroughly clean all traces of Accent herbicide from application equipment immediately after use.

PRECAUTIONS

Do not graze or feed forage or grain from the treated areas to livestock within 30 days after applications of Accent.

CAUTION- AVOID SPRAY DRIFT

Do not allow spray from application equipment to drift onto adjacent crops or land as even small amounts may injure other plants. When spraying near adjacent crops or plants, do everything possible to reduce spray drift.

# 101. HAZARD ASSESSMENT:

Accent is applied as a dispersed granule (a Flowable) to the base of corn plants with ground equipment only.

## 101.1 NONTARGET HAZARDS:

*Terrestrial Organisms*- Accent technical is characterized as "practically nontoxic" to birds whether in single dose or in dietary tests. No avian reproduction studies have been done. The expected residues are less than one tenth of the $LD_{50}$ for terrestrial organisms.

Assuming a maximum application of 1.334 oz ai/A or 0.083 lbs ai/A, Kenega's nomogram can be used to predict the following maximum residues immediately after spraying.

| Substrate | Residue (ppm) |
|---|---|
| Short rangegrass | 20.00 |
| Long grass | 9.17 |
| Leaves and leafy crops | 10.42 |
| Forage (alfalfa, clover) | 4.83 |
| Pod containing seeds | 1.00 |
| Large insects | 1.00 |
| Fruit | 0.20 |

These values are far below all of the $LD_{50}$s that have been obtained. A proposed single application, 0.083 lbs ai/A, would not pose a hazard to wild terrestrial animals.

*Aquatic Organisms-* The registrant submitted three aquatic studies in support of their request for an EUP. These studies lead to the characterization of Accent as "practically nontoxic" to the organisms involved. EEB raised the studies to "Core," after company officials cleared up a discrepancy in the concentrations of the test solutions. The expected residues are less that one tenth of the $LC_{50}$ for aquatic organisms.

If, as in EEB's exposure model, Accent was applied to a ten acre basin that drained into a one acre, six inch deep pond and if the runoff was 5%, then the expected concentration of Accent in the pond would be 2.54 ppb.

Since Accent's half-life in water is as much as 200 days, it would not completely degrade before the next application. Therefore, the residue concentrations would increase. So little is applied, that (at pH 5) it would take 102 years for the Accent residue to reach its limit of solubility in water of 395 ppm. This is well below the $LC_{50}$s (> 1,000 ppm) of the tested aquatic organisms. Even if somebody accidentally dumped the entire application for ten acres (0.83 lbs ai/A) into the ten acre pond, the residues would only be 50.6 ppb.

A proposed single application, 0.083 lbs ai/A, would not pose a hazard to wild aquatic animals.

*Beneficial Insects-* Because its $LD_{50}$ > 20$\mu$g and its NOEL is 20$\mu$g, Accent is characterized as practically nontoxic to honey bees.

*Phytotoxicity-* Accent is a member of a group of herbicides called the "Sulfonylureas." Some Sulfonylureas are aquatic herbicides. These chemicals kill plants at very low concentrations. For instance, metsulfuron methyl kills morningglory *(Ipomoea* sp.) at 0.2 ppb. Some Sulfonylurea herbicides kill plants at concentrations that are too low to be detected.

The registrant should complete and submit the following phytotoxicity tests:

Nontarget Area Phytotoxicity Tier II

123-2 Aquatic plant growth - TGAI (*Selenastrum capricornutum*).

*Environmental Fate and Residue-* The Environmental Fate and Groundwater Branch has not yet reviewed this submission.

## 101.2 ENDANGERED SPECIES:

*Animals of Concern-* Since its predicted residues are less than 1/20 of the $LC_{50}$ or $LD_{50}$ of test organisms, it is not expected that Accent will pose undue hazards to endangered species.

*Plants of Concern-* Since Accent's nontarget aquatic phytotoxicity is unknown, EEB cannot determine if any endangered aquatic plants would be exposed to undue risk.

## 101.3 ADEQUACY OF TOXICITY DATA:

EEB has accepted six basic studies "Core."

| TYPE OF TEST | TOXICITY | NOEL | CHARACTER-- ZATION |
|---|---|---|---|
| Bobwhite Dietary | $LC_{50}$>5,000 mg/kg | 1,682 mg/kg | Slightly Toxic |
| Mallard Dietary | $LC_{50}$>5,000 mg/kg | 1,682 mg/kg | Slightly Toxic |
| Bobwhite Acute | $LD_{50}$>2,000 mg/kg | 2,000 mg/kg | Practically Nontoxic |
| Rainbow trout 96-hour | $LC_{50}$ >1,000 ppm | >1,000 ppm | Practically Nontoxic |
| Bluegill sunfish 96-hour | $LC_{50}$ >1,000 ppm | >1,000 ppm | Practically Nontoxic |
| *Daphnia magna* 48-hour | $LC_{50}$ >1,000 ppm | >1,000 ppm | Practically Nontoxic |
| White Rat* | $LD_{50}$ >2,000 mg/kg | | Practically Nontoxic |
| White mouse* | $LD_{50}$ >2,000 mg/kg | | Practically Nontoxic |

*Study submitted to the Toxicology Branch. EEB has not reviewed it.

## 101.4 Adequacy of the Labeling:

The "Environmental Hazards" warning about washing of equipment should be changed to: "Do not contaminate water when disposing of equipment washwaters."

## 102. CLASSIFICATION:

Accent in not classified.



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## 103. CONCLUSIONS:

The label should be modified so that it specifically states that, if split applications are used, the total amount of Accent ai should not exceed the amount given for that usage in a single dose.

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## 104. REVIEWED BY:

James J. Goodyear
Biologist, Section 1
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

Signature: James J Goodyear
Date: March 1, 1990

## 105. APPROVED BY:

Raymond W. Matheny
Head, Section 1
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

Signature: Raymond W. Matheny
Date: 3/2/90

James W. Akerman
Branch Chief
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

Signature: _____
Date: _____