

US EPA ARCHIVE DOCUMENT

7-28-93
Trucyfile

610431



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

JUL 28 1993

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Pendimethalin: Reregistration-Toxicological Data Requirements

TOX Chem No.: 454BB
PC No.: 108501
DP Code: D170935
Submission No: S4066583

FROM: William B. Greear, M.P.H. *William B. Greear 6/1/93*
Review Section IV, Toxicology Branch I
Health Effects Division (H7509C)

TO: Walter Waldrop/Terri Stowe, PM Team 71
Reregistration Branch
Special Review and Reregistration Division (H7508W)

THRU: Marion P. Copley, D.V.M., Section Head *Marion P. Copley*
Review Section II, Toxicology Branch I
Health Effects Division (H7509C) *6/17/93*

I. CONCLUSIONS

The toxicological data base is adequate and will support the reregistration of pendimethalin.

II. REQUESTED ACTION

Walter Waldrop, of the SRD (Reregistration Branch), in a memorandum generated in early 1993, has requested that Tox I clarify the status of the toxicological data requirements for the reregistration of pendimethalin.



Recycled/Recyclable
Printed with Soy/Canola Ink on paper that
contains at least 50% recycled fiber

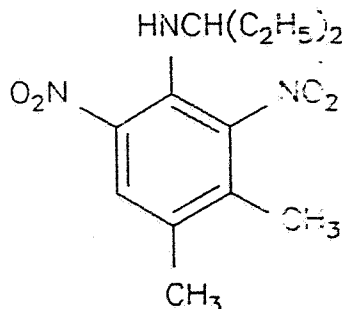
016431

III. PRODUCT INFORMATION

Pendimethalin, No. 454BB
Updated June 1993

Pendimethalin (3,4-xylidine, N-(1-ethylpropyl)-2,6-dinitro) is a herbicide plant growth regulator and is used to control germinating weeds. It is applied using both ground and aerial equipment and depends on mechanical and natural (rain) means for soil incorporation to be effective. Pendimethalin has both terrestrial food crop and nonfood uses. Tolerances have been established for residues of pendimethalin on several raw food crops under 40 CFR 180.361. Nonfood-crop uses include both ornamentals and tobacco. Pendimethalin's proprietary name is PROWL®. The current formulation is PROWL 4E (42.3% a.i.), Registration No. 241-243. Its chemical structure is as follows:

PENDIMETHALIN



The Chemical Abstracts Service Registry Number is 40487-42-1, and the TOX Chem No. is 454BB. The PC No. is 108501. It is a list A chemical.

C10431

IV. DATA REQUIREMENTS (40 CFR 158.340)

Pendimethalin, No. 454BE
Updated June 1993

Technical

| | <u>Required</u> | <u>Satisfied</u> |
|---|-----------------|------------------|
| 81-1 Acute Oral Toxicity | Y | Y |
| 81-2 Acute Dermal Toxicity | Y | Y |
| 81-3 Acute Inhalation Toxicity | Y | Y |
| 81-4 Primary Eye Irritation | Y | Y |
| 81-5 Primary Dermal Irritation | Y | Y |
| 81-6 Dermal Sensitization | Y | Y |
| 81-7 Acute Delayed Neurotoxicity (Hen) | N | - |
| 82-1 Subchronic Oral (Rodent) | Y | Y |
| 82-1 Subchronic Oral (Nonrodent) | Y | Y ¹ |
| 82-2 21-Day Dermal | Y | Y |
| 82-3 90-Day Dermal | N | - |
| 82-4 90-Day Inhalation | N | - |
| 82-5 90-Day Neurotoxicity (Hen) | N | - |
| 82-5 90-Day Neurotoxicity (Mammal) | - | - |
| 83-1 Chronic Toxicity (Rodent) | Y | Y |
| 83-1 Chronic Toxicity (Nonrodent) | Y | Y |
| 83-2 Carcinogenicity (rat) | Y | Y |
| 83-2 Carcinogenicity (mouse) | Y | Y |
| 83-3 Developmental Toxicity (rat) | Y | Y |
| 83-3 Developmental Toxicity (rabbit) | Y | Y |
| 83-4 Reproduction | Y | Y |
| 83-5 Chronic/Carcinogenicity | - | - |
| 84-2 Mutagenicity - Gene Mutation | Y | Y |
| 84-2 Mutagenicity - Structural Chromosomal Aberration | Y | Y |
| 84-4 Mutagenicity - Other Genotoxic Effects | Y | Y |
| 85-1 General Metabolism | Y | Y |
| 85-2 Dermal Penetration | N | - |
| 86-1 Domestic Animal Safety | N | - |

¹The chronic dog study satisfies the requirement for the 90-day dog study.

Y = Yes; N = No.

010431

V. TOXICOLOGY PROFILE

U.S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF PESTICIDES/HED/TB-1
TOX ONELINERS MEETING GUIDELINE REQUIREMENTS

FILE LAST PRINTED: 06/11/93

P.C. CODE 108501- N-(1-Ethylpropyl)-3,4-dimethyl-2,6-dimethyltrobenzenamine

| CITATION | MATERIAL | ACCESSION/ HRID NO. | RESULTS | TOX CAT | COREGRADE/ DOCUMENT# |
|--|--|---------------------------------|--|------------|---|
| 83-1(a) and 83-2(a) Feeding/oncogenic-2 year Species: rat Hazleton Lab America HLA 6123-112; 4/20/87 | Pendimethalin 91.9% (lot AC 3528-129-1) | 401744-01 | Levels tested in diet of CrI:CD(SD)Br str: 0, 100, 50, 5000 ppm (0, 5, 25, 250 mg/kg/day). Systemic MUEL = 100 ppm (5 mg/kg/day). Sys. LOEL = 500 ppm (25 mg/kg/d) based on pigmentation of thyroid follicular cells in male & female. At 5000 ppm - decr. survival and body weight gain in males. In females - decr. food consumption; incr. GGT, cholesterol, liver weight, liver/body wt. ratio, absolute & relative thyroid weight, icterus, dark adipose tissue, dark thyroids. In males & females - follicular cell hyperplasia in the thyroid. Possible increase in thyroid follicular cell adenoma at 5000 ppm (refer to peer review). | | Min (Chronic & Onco) 008606 |
| 83-1(a) and 83-2(b) Chronic/onco feeding Species: mice Internl. Res. and Develop. Co IK1-028; 10/15/88 | Pendimethalin 92.6% (batch AC 5213-72A) | 409099-01 | Levels tested in the diet of CrI:CD-1 strain: 0, 100, 500 & 5000 ppm (N - 0, 12.3, 62.3 and 622.1 mg/kg/day F_ 0, 15.6, 78.3 & 806.9 mg/kg/d). NOEL = 500 ppm. LOEL = 5000 ppm - incr. mortality in females, decr. body wt. in females, incr. absolute thyroid, liver and gall bladder wts and/or relative body and brain weight ratios in males and females, amyloidosis in males. | | Min. (carcinogen) 008606 Suppl- chroni: 008606 |
| 83-1(b) Feeding-2 year Species: dog Litton Bionetics Inc. 20755; 12/79 | Proxl (AC-92,553 Tech.) | 244444 244445 00067519 | NOEL = 12.5 mg/kg/day. LEL = 50 mg/kg/day (increase in serum alkaline phosphatase and increased liver weight, hepatic lesions) | | Minimum 001035 |
| 83-3(a) Developmental Toxicity study Species: rat Hazleton 362-155; 8/17/79 | Pendimethalin Tech. | 241595 00025752 417252-02 | Teratogenic NOEL > 500 mg/kg/day (HDT) Fetotoxic NOEL > 500 mg/kg/day Levels tested = 125, 250, 500 mg/kg. Upgraded to Minimum. Individual CDFA - EPA Review, 2/15/89: Agreement that the coregrade be changed from guideline to supplementary. Individual animal data were reevaluated (DER 008558 - 5/9/91) allowing an upgrade to Minimum. | | Guideline 000544 Supplementary 007751 Minimum 008558 |
| 83-3(b) Developmental Toxicity Study Species: rabbit Hazleton 362-164; 5/11/82 | Pendimethalin Tech 92.2% | 248659 | NOEL > 60 mg/kg/day (HDT). Levels tested = 0, 15, 30, 60 mg/kg | | Minimum 002406 |
| 83-4 Reproduction-2 generation Species: rat Toxicology Labs Ltd. CBG/2/90 7/12/90 | AC 92553 92.6% (Pendimethalin) | 417252-03 | Doss levels: 500, 2500 & 5000 ppm (males: 34, 171 & 346 mg/kg/day; females: 43, 216 and 436 mg/kg/day) in Sprague-dawley strain. Reprod. NOEL = 500 ppm (43 mg/kg/day). Reprod LOEL = 2500 ppm (216 mg/kg/day) based on decrease in pup weight. Parental NOEL = 500 ppm (34 mg/kg/d). Parental LOEL = 2500 ppm (171 mg/kg/day) based on decrease in body weight gain & food consumption. Conversion from original concentration (ppm) to dose (mg/kg/day) changed from DER 008558. Based on 1991 letter with time weighted mean intake | | Minimum 008558 N.A.S.D. |

010431

U.S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF PESTICIDES/HED/TB-1
TOX ONELINERS MEETING GUIDELINE REQUIREMENTS

P.C. CODE 108501-N-(1-Ethylpropyl)-3,4-dimethyl-2,6-dinitrobenzenamine FILE LAST PRINTED: 06/11/93

| CITATION | MATERIAL | ACCESSION/ HRID NO. | RESULTS | TOX CAT | COREGRAPH/ DOCUMENT | Guideline 005311 |
|--|--|------------------------|---|------------|------------------------|--|
| 82-1(a) Feeding-3 month Species: rat American Cyanamid Co. AX-86-1; 1/28/86 | Pendimethalin (AC 92,553 Tech). 92.1% | 261305 | Thyroid function study in male rats. MOEL = 500 ppm. LEL = 5,000 ppm (decr. in hematocrit & hemoglobin in males, decreased body wt. gain & food consumption, & hypertrophy of the liver accompanied by increased liver weights). Levels tested: 100,500 and 5,000 ppm in Charles River CD(SD)Br Age - 4 wks. Mean body wt. - 100-115 (M); 87-103 (F) | | | |
| 82-2 Dermal-3 week Species: rabbit Food and Drug Research Lab 1613; 8/24/73 | Pendimethalin Tech. | 00026663 | NOEL > 1 g/kg (HDT). Levels tested = 250, 500, 1000 mg/kg | | | Minimum 000544 |
| 82-2 Dermal-3 week Species: rabbit | Praxl (4E - 43.8% a.i.) | | Slight to moderate erythema and edema at 2 ml/kg/24 hours. | | | Minimum 000543 |
| 84-4 Mutagenic-reverse mutation Species: salmonella American Cyanamid Co. 0166; 10/28/85 | Pendimethalin tech (92.2% | 260403 00153768 | Positive in Salmonella typhimurium; strains TA1538 and TA98, with S-9 activation. Large response in TA 1538 (reproducible), small response in TA98. Dose response to top dose. Some precipitation at top dose. | | | Acceptable 005828 009809 |
| 84-4 Mutagenic-DNA repair test Species: Pharmakon Res. Inst. Inc. PH311-AC-002-85; 10/25/85 | Pendimethalin Tech. 91.2% | 260403 000153771 | Negative to 3000 ug/well, => 6000 ug/mL were cytotoxic. | | | Acceptable 005828 009809 |
| 84-2(b) Mutagenic-chromosome aberr. Species: Pharmakon Res. Inst. Inc. PH320-AC-001-85; 10/17/85 | Pendimethalin Tech 92.9% | 260403 000153770 | Negative. CHO: 5 to 25 ug/mL with 1st activation, 12.5 to 100 ug/mL with activation. | | | Acceptable 005828 |
| 84-4 Mutagenic-(HGPR) Species: CHO cell Pharmakon Res. Inst. Inc. PH-314-AC001-85; 10/17/85 | Pendimethalin tech. 92.2% | 260403 00153369 | Negative with S9. Inconclusive with/without S9, although suggestive increases were obtained w/o activation at levels up to 10 ug/mL. Dose levels were inadequate. Unacceptable (New PR Doc. No.) | | | Acceptable (W/S9) 005828 Unacc (-S9) 009809 |

010431

8

U.S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF PESTICIDES/HED/TB-1
TOX ONELINERS MEETING GUIDELINE REQUIREMENTS

P.C. CODE 108501-N-(1-Ethylpropyl)-3,4-dimethyl-2,6-dinitrobenzenamine FILE LAST PRINTED: 06/11/93

| CITATION | MATERIAL | ACCESSION/ PKID NO. | RESULTS | TOX CAT | COREGRADE/ DOCUMENT# |
|---|--|------------------------|---|------------|--|
| 84-4 Mutagenic-micronucleus assay Species: mice Microbiological Associates 19801.122004; 06/07/91 | AC 92,533 (pendimethalin 92.98%) | 420278-01 | Negative. Dose levels: 625 & 1250 mg/kg in ICR strain. | | Acceptable 009821 |
| 85-1 Metabolism Species: rat American Cyanamid Co. 2-463; 11/7/73 | Proul (radiolabelled CL 92,553 (parent)) | 00046275 | The following metabolites were present in either urine, muscle, blood, fat, kidney or liver. The metabolites identified by code (see review for structures) were as follows: CL 92,553; CL 99,900; CL 113,066; CL 113,071; CL 113,072; CL 202,078 CL 202,345; CL 202,347. No additional data required at this time. | | Supplementary 004026 <i>new doc.</i> |
| 81-1 Acute oral LD50 Species: rat American Cyanamid Co. A-72-4; 6/1/72 | Pendimethalin tech. 98.7% | 00026657 | LD50 (M) = 1250 mg/kg. LD50 (F) = 1050 mg/kg. | 3 | Minimum 000543 |
| 81-1 Acute oral LD50 Species: rat American Cyanamid Co. A-72-4; 6/1/72 | Pendimethalin Tech. 93% | | LD50 = 2140 mg/kg. | 3 | Minimum 000543 |
| 81-1 Acute oral LD50 Species: mice American Cyanamid Co. A-72-4; 6/1/72 | Pendimethalin Tech. | 00026657 | LD50 > 1620 mg/kg (M). LD50 > 1340 mg/kg (F). | 3 | Minimum 004026 |
| 81-1 Acute oral LD50 Species: rat American Cyanamid Co. A-73-133; 11/28/73 | Pendimethalin Tech. | 00072802 | LD50 = 2140 (1330-4430) mg/kg. | 3 | Minimum 004026 |
| 81-1 Acute oral LD50 Species: rat American Cyanamid Co. T-0169; 10/05/89 | Pursult plus EC, 30.1% (Pendi- 30.1%; Imazethapyr 2.1%) | 413981-03 | LD50 (M) = 3281 mg/kg. LD50 (F) = 3247 (2073-4264) mg/kg. LD50 (combined) = 3247 (2073-4264) mg/kg. | 3 | Guideline 008830 |

01C431

U.S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF PESTICIDES/HED/TB-1
TOX ONELINERS MEETING GUIDELINE REQUIREMENTS

P.C. CDF: 108501- N-(1-Ethylpropyl)-3,4-dimethyl-2,6-dinitrobenzenamine FILE LAST PRINTED: 06/11/93

| CITATION | MATERIAL | ACCESSION/ HRID NO. | RESULTS | TOX CAT | COREGRADE/ DOCUMENT# |
|---|--|------------------------|---|------------|-----------------------------|
| 81-2 Acute Dermal LD50 Species: rabbit American Cyanamid Co. A-72-4; 6/1/72 | Pendimethalin Tech. 93% | 00026657 | LD50 > 5000 mg/kg (HDT). | 3 | Minimum 000543 |
| 81-2 Acute Dermal LD50 Species: rabbit American Cyanamid Co. T-0613; 10/31/89 | Pursuit plus EC, 30.1% (Pendi- 30.1%; Imazethapyr 2.1%) | 413981-04 | LD50 > 2000 mg/kg. | 3 | Guideline 008838 |
| 81-3 Acute inhalation LC50 Species: rat Affiliated Medical research 122-1968-43; 10/24/73 | Pendimethalin Tech 15% Aq. sol | 00073342 | LC50 > 320 mg/L (nominal conc.). | 4 | Minimum 000543 004026 |
| 81-3 Acute inhalation LC50 Species: rat Biosearch Inc. 09-6690A; 07/12/89 | Pursuit plus EC, 30.1% (Pendi- 30.1%; Imazethapyr 2.1%) | 413981-04 | LC50 > 5.54 mg/L | 4 | Guideline 008838 |
| 81-4 Primary eye irritation Species: rabbit American Cyanamid Co. A-72-4; 6/1/72 | Pendimethalin tech. 93% | 00026657 | slight conjunctival irritation. | 3 | Minimum 000543 |
| 81-4 Primary eye irritation Species: rabbit American Cyanamid Co. A-73-133; 11/20/73 | Pendimethalin Tech. | 00072802 | slight irritation (unwashed eyes). | 3 | Minimum 004026 |
| 81-4 Primary eye irritation Species: Rabbit American Cyanamid Co. T-0161; 10/09/89 | Pursuit plus EC, 30.1% (Pendi- 30.1%; Imazethapyr 2.1%) | 413981-06 | Corneal involvement or irritation clearing in 7 days or less. | 3 | Guideline 008838 |

010421

U.S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF PESTICIDES/HED/TB-1
TOX ONELINERS MEETING GUIDELINE REQUIREMENTS

P. C. CODE 108501- N-(1-Ethylpropyl)-3,4-dimethyl-2,6-dinitrobenzenamine FILE LAST PRINTED: 06/11/93

| CITATION | MATERIAL | ACCESSION/ MRID NO. | RESULTS | TOX CAT | COREGRADE/ DOCUMENT# |
|---|--|------------------------|--|------------|-------------------------|
| 81-4 Primary eye irritation Species: rabbit American Cyanamid Co. T-0389; 01/31/92 | Pendimethalin, 60% | 425535-02 | Opacity at 21 days. | 1 | Guideline 010135 |
| 81-5 Primary dermal irritation Species: rabbit American Cyanamid Co. A-72-4; 6/1/72 | Pendimethalin 93% | | No irritation. | 4 | Minimum 000543 |
| 81-5 Primary dermal irritation Species: rabbit American Cyanamid Co. T-0162; 10/20/89 | Pursuit plus EC, 30.1% (Pendi- 30.1%; Imazethapyr 2.1%) | 413981-07 | Mild or slight irritant. | 4 | Guideline 008838 |
| 81-6 Dermal sensitization Species: guinea pig BioResearch Inc. 85-4639A; 8/1/85 | Pendimethalin Tech. 92.2% | 260403 | Nonsensitizing | | Minimum 005828 |
| 81-6 Dermal sensitization Species: guinea pig Dawson Research Corp. DRC 4915; 07/09/89 | Pursuit plus EC, 30.1% (Pendi- 30.1%; Imazethapyr 2.1%) | 413981-08 | It did not sensitize guinea pigs. | | Guideline 008838 |
| 81-6 Dermal sensitization Species: guinea pig Food and Drug Research Lab 8100; 11/16/84 | Prowl 42.3% | 261505 | Not a sensitizer. Dose levels: 0.4 mL of 30% for induction and challenge. Treatment: induction 1/week for 3 weeks; challenge 2 weeks later. | | Guideline 009875 |

010431

VI. DATA GAPS

None.

VII. ACTION TAKEN TO REMOVE DATA GAPS AND OBTAIN ADDITIONAL INFORMATION

None.

VIII. REFERENCE DOSE (RfD)

The oral RfD is 0.04 mg/kg/day based on a NOEL of 12.5 mg/kg/day determined in a 2-year dog study utilizing an uncertainty factor of 300 and a modifying factor of 1. The verification date for the Agency RfD workgroup review is September 16, 1987. It is anticipated that of new RfD workgroup review of pendimethalin will be forthcoming.

IX. PENDING REGULATORY ACTIONS

There are no pending regulatory actions against this pesticide at this time that TB-I is aware of.

X. TOXICOLOGICAL ISSUES

A. The Peer Review Committee on Carcinogenicity met on 3/18/92 and decided that pendimethalin was a Group C - possible human carcinogen and recommended that for the purpose of risk characterization the Reference Dose (RfD) approach should be used for quantification of human risk (see memorandum of William Greear and Ester Rinde dated 7/27/92).

B. A letter dated from Barbara Gingher of the American Cyanamide Company provided data on the time-weighted mean consumption of pendimethalin in the two-generation reproduction study - Study No. CBG/2/90; 7/12/90 (see the Supplemental Reproduction DER attached). These data are adequate and will be incorporated into the one-liners

[These data were only recently (6/93) provided to the Tox I-Reviewer for evaluation.]

C. Although the metabolism study is supplementary, no additional data is submitted to the registrant in its entirety.

BEST AVAILABLE COPY

55963:I:WP5.0:Greear:C.Disk:KENCO:11/28/90:de:VO:EK:CL
55963:WP5.1:Greear:1/3/91:MPC

required at this time.
If the registrant wishes to support a hormonal mechanism for thyroid tumors however other metabolism/pharmacokinetic data, as identified in Peer Review Document (7/27/92), would need to be submitted.

Reviewed by: William B. Greear, M.P.H.
Review Section IV, Toxicology Branch I (H7509C)
Secondary Reviewer: Marion P. Copley, D.V.M.
Review Section IV, Toxicology Branch I (H7509C)

010-131

Marion Copley
6/17/93

DATA EVALUATION REPORT-SUPPLEMENTAL

Study Type: Two-Generation Reproduction TOX. Chem. No.: 454BB
Study-Guideline Series 83-4 MRID No.: 417252-03*
PC No.: 108501

Test Material: AC92,533

Synonyms: Pendimethalin

Study Number: CBG/;2/90

Sponsor: American Cyanamid Company
Princeton, NJ 08543-0400

Testing Facility: Toxicol Laboratories Limited
Ledburg, U. K.

Title of Report: Dietary Rat Two-Generation Reproduction
Toxicity Study with AC 92,553

Author: L. F. H. Irvine, P. Boughton

Report Issued: July 12, 1990

Conclusions: NOEL (parental) = 500 ppm (≈ 34 mg/kg/day; ≈ 43 mg/kg/day)
LEL (parental) = 2500 ppm (decreased body weight gain and food consumption in males ≈ 216 mg/kg/day and females ≈ 216 mg/kg/day)
NOEL (reproduction) = 500 ppm (≈ 43 mg/kg/day)
LEL (reproduction) = 2500 ppm decrease in number of pups born and pup body weight ≈ 216 mg/kg/day)

Classification: Core-Minimum

Study Acceptability: The study satisfies the requirements for a Guideline Series 83-4 Two-Generation

New Data: In a letter dated November 1, 1991, Barbara Gingher (attached) of the American Cyanamide Company has submitted the time-weighted-mean of pendimethalin as requested. The data are presented below in Table 1. Table 2 represents the means to be used for calculations of intake for risk assessment.

* - Original MRID No. provided, no new MRID No. is available.

AA

Time-Weighed-Mean Consumption of Pendimethalin¹

| Period | Generation | Mean Calculated Intake (mg/kg/day) ±S.D. | | |
|--------------------------------------|------------|--|----------|----------|
| | | 500 ppm | 2500 ppm | 5000 ppm |
| Males: | | | | |
| Pre-mating | P1 | 36±6 | 173±25 | 343±45 |
| | F1 | 42±13 | 215±70 | 457±139 |
| Post-mating | P1/F1 | 25±1 | 128±6 | 259±13 |
| Females: | | | | |
| Pre-mating | P1 | 40±5 | 195±21 | 389±37 |
| | F1 | 46±10 | 236±50 | 484±88 |
| Pregnancy (both a & b litters) | P1/F1 | 33±2 | 168±7 | 343±19 |

Table 2

| | 500 ppm | 2500 ppm | 5000 ppm |
|----------------------|--------------|---------------|---------------|
| Males ² | 34 mg/kg/day | 172 mg/kg/day | 346 mg/kg/day |
| Females ³ | 43 mg/kg/day | 216 mg/kg/day | 436 mg/kg/day |

¹Table extracted from Memorandum of B. Gingler, American Cyanamide Company, 11/1/91

² Means of P1, F1 pre and post mating intake

³ Means of P1, F1 Pre mating intake

12



NO 40 CFR 158 DATA ARE IN THIS SUBMISSION

010431

American Cyanamid Company
Agricultural Research Division
P O Box 400
Princeton, NJ 08540
(609) 799-0400

November 1, 1991

Ms. Terri Stowe
Special Review and Reregistration Division
Office of Pesticide Programs
U.S. Environmental Protection Agency
Crystal Mall, Bldg. No. 2
1921 Jefferson Davis Highway
Arlington, VA 22202

Re: Pendimethalin Registration Standard
Case # 0187; Submission of Information
Required by an EPA Letter Dated September 27, 1991

Dear Ms. Stowe:

American Cyanamid is providing the information required by an EPA letter which we received on October 4, 1991 (attached). In the letter, Toxicology Branch I stated a need for certain time weighted mean consumption values related to a rat reproduction study with pendimethalin (MRID #41725203). These are provided below:

| Period | Generation | Mean Calculated Intake (mg/kg/day) - S.D. | | |
|--------------------------------------|------------|---|----------|-----------|
| | | 500 ppm | 2500 ppm | 5000 ppm |
| Males: | | | | |
| Pre-mating | P1 | 36 ± 6 | 173 ± 25 | 343 ± 45 |
| | F1 | 42 ± 13 | 215 ± 77 | 437 ± 139 |
| Post-mating | P1/F1 | 25 ± 1 | 128 ± 5 | 259 ± 13 |
| Females: | | | | |
| Pre-mating | P1 | 40 ± 5 | 195 ± 21 | 389 ± 37 |
| | F1 | 46 ± 10 | 236 ± 50 | 484 ± 88 |
| Pregnancy (both a & b litters) | P1/F1 | 33 ± 2 | 168 ± 7 | 343 ± 19 |

We believe that this table provides the information requested in your letter and hope that it is helpful in the evaluation of pendimethalin. If you have any other questions concerning this study, please call me at Extension 2234.

Respectfully submitted,

Barbara Gingham
Barbara Gingham
Product Registrations Manager
U.S. Regulatory Affairs

13