

DP Barcode :D194985
 PC Code No :129016
 EEB Out : 10/01/93

To: Joanne Miller
 Product Manager
 Special Review and Reregistration Division (H7508W)

From: Anthony F. Maciorowski, Chief
 Ecological Effects Branch/EFED (H7507C)

Attached, please find the EEB review of...

Reg./File # : 062719-EEG
 Chemical Name : Flumetsulam
 Type Product : Herbicide
 Product Name :
 Company Name : DowElanco
 Purpose : review dowelanco data on groundwater to determine if new chemical contaminate will affect plants

Action Code : 101 Date Due : 1/13/94
 Reviewer : Davy Date In EEB: 9/6/93

EEB Guideline/MRID Summary Table: The review in this package contains an evaluation of the following:

| GDLN NO | MRID NO | CAT | GDLN NO | MRID NO | CAT | GDLN NO | MRID NO | CAT |
|---------|---------|-----|---------|---------|-----|----------|---------|-----|
| 71-1(A) | | | 72-2(A) | | | 72-7(A) | | |
| 71-1(B) | | | 72-2(B) | | | 72-7(B) | | |
| 71-2(A) | | | 72-3(A) | | | 122-1(A) | | |
| 71-2(B) | | | 72-3(B) | | | 122-1(B) | | |
| 71-3 | | | 72-3(C) | | | 122-2 | | |
| 71-4(A) | | | 72-3(D) | | | 123-1(A) | | |
| 71-4(B) | | | 72-3(E) | | | 123-1(B) | | |
| 71-5(A) | | | 72-3(F) | | | 123-2 | | |
| 71-5(B) | | | 72-4(A) | | | 124-1 | | |
| 72-1(A) | | | 72-4(B) | | | 124-2 | | |
| 72-1(B) | | | 72-5 | | | 141-1 | | |
| 72-1(C) | | | 72-6 | | | 141-2 | | |
| 72-1(D) | | | | | | 141-5 | | |

Y=Acceptable (Study satisfied Guideline)/Concur
 P=Partial (Study partially fulfilled Guideline but additional information is needed)
 S=Supplemental (Study provided useful information but Guideline was not satisfied)
 N=Unacceptable (Study was rejected)/Nonconcur

DP BARCODE: D194985

CASE: 031451
SUBMISSION: S443967

DATA PACKAGE RECORD
BEAN SHEET

DATE: 09/14/93
Page 1 of 1

* * * CASE/SUBMISSION INFORMATION * * *

CASE TYPE: REGISTRATION ACTION: 101 RESB NC-FOOD/FEED USE
CHEMICALS: 129016 Flumetsulam 98.0000%

ID#: 062719-EEG dowelanco/de-498 98% technical manuf. use product
COMPANY: 062719 DOWELANCO
PRODUCT MANAGER: 23 JOANNE MILLER 703-305-7830 ROOM: CM2 237
PM TEAM REVIEWER: STEVEN ROBBINS 703-305-7546 ROOM: CM2 263
RECEIVED DATE: 07/07/93 DUE OUT DATE: 01/13/94

* * * DATA PACKAGE INFORMATION * * *

DP BARCODE: 194985 EXPEDITE: N DATE SENT: 09/14/93 DATE RET.: / /
CHEMICAL: 129016 Flumetsulam
DP TYPE: 001 Submission Related Data Package
CSF: N LABEL: N

| | | | |
|-------------|---------|----------|--------------------------|
| ASSIGNED TO | DATE IN | DATE OUT | ADMIN DUE DATE: 01/12/94 |
| DIV : EFED | 9/16/93 | / / | NEGOT DATE: 01/12/94 |
| BRAN: EEB | 9/16/93 | / / | PROJ DATE: / / |
| SECT: | / / | / / | |
| REVR : | / / | / / | |
| CONTR: | / / | / / | |

* * * DATA REVIEW INSTRUCTIONS * * *

Please review the Fax. dated August 26, 1993 from Dowelanco and advise as to how this ground water detect will effect the registration of this new chemical. Does EEB agree with the numbers (EEC and EC50) for terrestrial and aquatic risk due to the ground water detect of 100 ppt.

* * * DATA PACKAGE EVALUATION * * *

No evaluation is written for this data package.

* * * ADDITIONAL DATA PACKAGES FOR THIS SUBMISSION * * *

| | | | | | | |
|--------|----------------|----------|----------|-----|-----|-------|
| DP BC | BRANCH/SECTION | DATE OUT | DUE BACK | INS | CSF | LABEL |
| 192816 | EEB/R53 | 07/08/93 | 11/05/93 | Y | N | N |



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

OCT 1 1993

MEMORANDUM

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

SUBJECT: Flumetsulam Groundwater Concerns, D194985

FROM: *for* Anthony F. Maciorowski, Chief
Ecological Effects Branch
Environmental Fate and Effects Branch (H7505C) *10/1/93*

TO: Joanne Miller, PM-23
Fungicide-Herbicide Branch
Registration Division (H7505C)

EEB has reviewed the Flumetsulam groundwater contamination data provided by DowElanco that was submitted under D194985. This was submitted with the question as to whether EEB agrees with the registrant's EEC and EC₅₀ numbers as to terrestrial and aquatic plant risk due to groundwater detection of 0.1 ppb flumetsulam.

The EEB concludes that 0.1 ppb flumetsulam contamination in the groundwater will not adversely affect terrestrial or aquatic plants. However, the EEB cannot calculate the effects of long-term buildup in the groundwater system.

EEB's preliminary exposure estimate is 2X below the level of concern for terrestrial plants and 39X below the level of concern for aquatic plants.

The results and calculations are attached.



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EEC CALCULATIONS OF IRRIGATION ON TERRESTRIAL PLANTS

The following is a calculation of the amount of flumetsulam that will be applied on terrestrial plants from contaminated ground water.

Assumptions:

EC₂₅ = 0.0003 lb ai/A (vegetative vigor radish)
Groundwater contains 0.1 ppb flumetsulam
1 inch of water in an acre = 27,154 gallons
1 ppm = 0.013 oz/100 gallons of water
Irrigation averages around 1 to 2 inches/A

1 ppm = 27,154 gallons/A x 0.013oz/100 gallons =
271.54 x 0.013 oz/A = 3.53002 oz./A

3.53002 oz/A / 1000 = 0.00353 oz/A = 1 ppb

0.1 ppb = 0.000353 oz/A (this is concentration of groundwater)

0.000353 oz/A / 16oz/lb =
0.000022 lb/A in 0.1 ppb water/A in one inch of water per acre

0.000022 lb/A x 2 inches water applied to acre = 0.000044 lb/A
flumetsulam applied

Fate Data:

field dissipation $t_{1/2}$ = 1.5 to 3 months
aerobic soil $t_{1/2}$ = 2 to 3 months
soil photodegradation $t_{1/2}$ = 90 days in non-sterile soils
confined rotational data shows accumulations at 10 ppb at 365 days
and 100 ppb at 30 to 120 days posttreatment.

Assumptions:

Initial concentration = 0.000044 lb ai/A
Irrigation application of once every two weeks
Period = 90 day period
Number of applications = 5

It is assumed that repeated doses of sublethal amounts of amino acid synthesis inhibitor herbicides, such as flumetsulam, when applied to the foliage, will buildup within the plant vascular system at a rate similar to terrestrial fate data that is provided.

Using a fate program, the maximum typical residue at the end of the 90 day period is 0.000179 lb ai/A. The average residue is 0.000119 lb ai/A. This EEC value is below the EC₂₅ value of 0.0003 lb ai/A by 2X. It appears that the first year of application of contaminated ground water will not affect terrestrial plants.

EEC CALCULATIONS OF IRRIGATION ON AQUATIC PLANTS

The following is a calculation of the amount of flumetsulam that will be applied on aquatic plants from contaminated ground water via irrigation.

Assumptions:

EC₅₀ = 3.1 ppb (*Lemna gibba*)
Groundwater contains 0.1 ppb flumetsulam
Amount of flumetsulam applied via 2 inches/A contaminated irrigation water = 0.000044 lb ai/A
Irrigation application of once every two weeks
Period = 90 day period
Number of applications = 5
Flumetsulam is somewhat stable in aquatic systems

Aquatic EEC=

0.000044 lb ai/A x 10A x 5% runoff = 0.000022 lb ai/A
Five applications over 90 day period gives an
aquatic EEC = 0.000110 lb ai/A
0.000110 lb ai/A x 735 = 0.08 ppb in 6 feet of water

The maximum typical residue at the end of the 90 day period is 0.08 ppb. This EEC value is below the EC₅₀ value of 3.1 ppb by a factor of 39. It appears that the first year of application of contaminated ground water will not affect aquatic plants.

If you have any questions, please do not hesitate to contact Mike Davy.