DP Barcode : D182817
PC Code No : 128887
EEB Out : NOVNOV 9 1993

To: Joanne Miller, PM-23 & Stephen Robbins
Fungicide-Herbicide Branch
Registration Division (H7505C)

From: Anthony F. Maciorowski, Chief
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

Attached, please find the EEB review of...

Reg./File # : 352-509
Chemical Name : Tribenuron methyl, Methyl 2-[[[[N-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)methylamino]carbonyl]amino]sulfonyl]benzoate
Type Product : Sulfonylurea class herbicide
Product Name : Du Pont Express® Herbicide
Company Name : Applicant:
Du Pont Agricultural Products
B.O. Box 80038
Walker's Mill, Barley Mill Plaza
Wilmington, Delaware 19880-0038
Purpose : 6(A)(2) Adverse Effects Data

Action Code : 405 Date Due: 10/16/92

Reviewer : Robert I. Rose

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	GLDN NO	MRID NO	CAT
6(A)(2)	42289401	S	6(A)(2)	42289403	S	6(A)(2)	42289405	S
6(A)(2)	42289402	S	6(A)(2)	42289404	S	6(A)(2)	42289406	S

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

OTHER/COMMENTS/CONCLUSION: MRID's 42289401, 42289403 & 42289405 demonstrated egg production by *Aleochara bilineata*, a staphylinid beetle, was reduced in experiments in which tribenuron methyl and thifensulfuron methyl were applied in imitation of field use of these two sulfonylurea herbicides. Therefore, the adverse effects data also applies to products containing thifensulfuron methyl as active ingredient. Although egg reduction was measurable, it is doubtful that the impact on beneficial insects in wheat and barley would be significant because they are annual crops and application is early allowing most of the growing season for arthropod ingress or movement into treated fields. Mitigating label language is not recommended since it does not appear a practical alternative.

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

NOV 9 1993

MEMORANDUM

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

SUBJECT: 6(a)(2) Unreasonable Adverse Effects on the Environment Data on Express® Herbicide, EPA Reg. No. 352-509.

FROM: Anthony F. Maciorowski, Chief
for Ecological Effects Branch
Environmental Fate and Effects Division (H7507C) Douglas J. Urban 11/9/93

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

INTRODUCTION:

Express® herbicide contains 75% tribenuron methyl, methyl 2-[[[[N-(4-methoxy-6-methyl-1,3,5-triazin-2-yl) methylamino] carbonyl]amino]sulfonyl]benzoate and is a sulfonylurea class herbicide. The label recommends that it be used only on wheat and barley. The use rate is only 1/6 to 1/3 ounce per acre. The label states that injury to or loss of desirable trees or vegetation may result from failure to use the product as recommended. Various practices are given on the label to minimize spray drift since the product is active with broad spectrum at such low rates of use.

The adverse 6(a)(2) data consisted of the six studies listed and discussed below which were based on methods of the IOBC/WPRS Working Group and BBA Guidelines rather than EPA Guidelines. Tribenuron methyl was evaluated at a dose rate equivalent to a single field application of 40 grams per hectare. This equates to 0.57 oz per acre, somewhat above the 1/3 ounce per acre rate. The three tests that reported adverse oviposition effects on *Aleochara bilineata* (Staphylinidae) evaluated tribenuron methyl and thifensulfuron methyl, another sulfonylurea herbicide. Only nine females were treated with the test material in each test and the data was not statistically analyzed.

TEST RESULTS:

1. MRID # 42289401 is A 1992 study of the acute toxicity for *A. bilineata* (Staphylinidae) of Pointer® according to the IOBC/WPRS Guideline for Testing of Chemicals for Du Pont Conoco Technologies,

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Paris by Battelle-Institut e.V., Frankfurt am Main. The test material was given as tribenuron methyl (75%), methyl-2-[N-(4-methoxy-6-methyl-1,3,5-traizin-2-yl)-3-methylureidosulfonyl] benzoate. The test concluded that Pointer was slightly harmful for egg production. The controls averaged 55.2 ±9.2 eggs while the treated beetles averaged 17.9 ±12.8 eggs.

2. MRID # 42289402 is a 1992 study of the acute toxicity for *Poecilus cupreus* (Carabidae) of Pointer according to the BBA Guideline for Testing of Chemicals for Du Pont Conoco Technologies, Paris by Battelle-Institut, Frankfurt. The test material was the same as in MRID # 42289401. No test beetles died and the test found Pointer as harmless.

3. MRID # 42289403 is A 1992 study of the acute toxicity for *A. bilineata* of Harmony Extra according to the IOBC/WPRS Guideline for the Testing of Chemicals for Du Pont Conoco Technologies, Paris by Battelle-Institut, Frankfurt. The test material was given as tribenuron methyl (25%) and thifensulfuron methyl (50%), methyl 3-[[[[N(4-methoxy-6-methyl-1,3,5-triazin-2-yl)-amino]carbonyl] amino]sulfonyl]thiophenecarboxylate. The rate of application of this combination was equivalent to 40 g/Ha. The mean number of eggs laid per beetle in the test vessels was 30.1 ±15.8 compared to 55.5 ±9.2 in the control. ""According to the classification system proposed by the IOBC/WPRS Working Group "Pesticides and Beneficial Organisms" the test substance Harmony Extra can be classified as...slightly harmful...regarding egg production.""

4. MRID # 42289404 is a 1992 study of the acute toxicity for *P. cupresus* of Harmony Extra according to the BBA Guideline for Testing of Chemicals for Du Pont Conoco Technologies, Paris by Battelle-Institut, Frankfurt. The test material and treatment rate were the same as in MRID 42289403. At the end of the test, no test animals were recorded as dead and none died in the control.

5. MRID # 42289405 is a 1992 Study of the Acute Toxicity for *A. bilineata* of Harmony + Exell® according to the IOBC/WPRS Guideline for Testing of Chemicals for Du Pont Conoco Technologies by Battelle-Institut, Frankfurt. The test material was a mixture of thifensulfuron methyl (75%) and a nonionic surfactant, ethyleneglycolmono-n-butylether. The rate of application for thifensulfuron was equivalent to 10 g/ha and the rate of surfactant applied with it was 0.5 L/ha. The mean number of eggs produced by the control beetles was 55.5 ±9.2 compared to 36.2 ±14.9 for those treated with the mixture of test substances. This resulted in Harmony + Excell being classified as slightly harmful to egg production.

6. MRID # 42289406 is a 1992 study of the acute toxicity for *P. cupreus* of Harmony + Ecell according to the BBA Guideline for Testing of Chemicals for Du Pont Conoco Technologies, Paris by Battelle-Institut, Frankfurt. The test material and treatment rate

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were the same as used in MRID # 42289405. None of the ground beetles died in either the test or control groups and the test materials were classified as harmless.

CONCLUSIONS:

The three studies utilizing *P. cupres* as test organism, MRID #'s 42289402, 42289404 and 42289406, did not contain adverse effects data.

The three studies identified by MRID #'s 42289401, 42289403 and 42289405 in which *A. bilineata* egg productivity was evaluated after treatment with tribenuron methyl, tribenuron methyl combined with thifensulfuron methyl and thifensulfuron combined with a surfactant reported adverse effects of reducing egg production.

Express herbicide contains tribenuron methyl as active ingredient. The treatment rates in the two studies with tribenuron that demonstrated reduced egg productivity were close enough to the label use rate to surmise that normal application of this herbicide could adversely affect nontarget *A. bilineata*.

Thifensulfuron methyl was also tested in MRID #'s 42289403 and 42289405 and found to reduce egg production. Therefore, the FIFRA Sec. 6(a)(2) adverse effects reporting and EPA processing and review requirements apply to thifensulfuron methyl as well as tribenuron methyl. Thifensulfuron methyl is registered under the tradenames of Harmony®, Pinnacle®, DPX®-M6316, Concert® and Agtab®. EPA registration numbers are 352-446, 352-525, 352-529, 352-538, 352-539, 352-561 and 352-563.

The three studies testing tribenuron methyl and thifensulfuron methyl on *A. bilineata* consistently resulted in reduced oviposition although the number of test beetles was small. Since the studies were conducted according to the IOBC/WPRS, they were classified as supplemental rather than core. However, they do present evidence to indicate the adverse effect of reproductive impairment. It is reasonable to predict that other beneficial species of nontarget arthropods may be similarly affected. These data would support a presumption of high risk to certain beneficial insects. However, the risk does not warrant immediate notification of the Product Manager. No new data are required based on the submitted studies.

RECOMMENDATIONS:

The principal uses of these two sulfonylurea herbicides is on annual crops. Express herbicide is registered for use on wheat and barley. Applications are made after the crop is in the 2-leaf stage, but before the flag leaf is visible. Annual crops tend to support smaller and less effective pest predator and parasite communities than perennial crops because of cultivation and rotation. They are also often treated with insecticides that have

a more severe impact on beneficial arthropods than the potential of partial egg reduction from sulfonylurea treatment. Furthermore, tribenuron applications are made when the crop is young, typically before nontarget arthropod/crop community populations have developed and ingress would continue well after application through the growing season. Although egg reduction was measurable, it is doubtful that the impact on beneficial species in wheat and barley would be of tangible significance. On a perennial crop such as alfalfa, where more predacious and parasitic arthropods occur and are carried over from one year to the next, the impact could be of greater significance provided broad spectrum insecticides are not also used. Mitigating label language is not recommended for the annual crops upon which the products are registered for use because the impact is expected to be minimal because of the nature of the crop and early stage of growth at application. Furthermore, mitigating language does not appear practical for these crops in consideration of the product use pattern.

On the Express herbicide label, the precautionary statement under Environmental Hazards states: "Do not apply directly to water or wetlands (swamps, bogs, marshes and potholes)." Refer to PR Notices 93-3 and 93-8 for the most current label language to be used by registrants. This may also be appropriate for products containing thifensulfuron methyl as active ingredient.

Any additional adverse effects data showing similar oviposition suppression or use of these two sulfonylurea herbicides on perennial crops with large beneficial insect populations may be cause to seek alternatives to reduce this type of adverse effects.

DP BARCODE: D182817

CASE: 007502 DATA PACKAGE RECORD DATE: 09/02/93
SUBMISSION: S417048 BEAN SHEET Page 1 of 1

* * * CASE/SUBMISSION INFORMATION * * *

CASE TYPE: REGISTRATION ACTION: 405 6(A)(2) ADVERSE DATA
CHEMICALS: 128887 Tribenuron methyl 75.0000%

ID#: 000352-00509 EXPRESS HERBICIDE
COMPANY: 000352 E. I. DU PONT DE NEMOURS AND CO, INC.
PRODUCT MANAGER: 23 JOANNE MILLER 703-305-7830 ROOM: CM2 237
PM TEAM REVIEWER: STEVEN ROBBINS 703-305-7546 ROOM: CM2 263
RECEIVED DATE: 04/22/92 DUE OUT DATE: 07/01/92

* * * DATA PACKAGE INFORMATION * * *

DP BARCODE: 182817 EXPEDITE: N DATE SENT: 09/21/92 DATE RET.: / /
CHEMICAL: 128887 Tribenuron methyl
DP TYPE: 001 Submission Related Data Package
CSF: N LABEL: Y

ASSIGNED TO	DATE IN	DATE OUT
DIV : EFED	09/21/92	11/22/93
BRAN: EEB	/ /	/ /
SECT:	/ /	/ /
REVR :	/ /	18 NOV 1993
CONTR:	/ /	/ /

ADMIN DUE DATE: 10/16/92
NEGOT DATE: 12/22/92
PROJ DATE: / /

* * * DATA REVIEW INSTRUCTIONS * * *

Please review this data (MRID#s 422894-01 thru 422894-06) and advise as to your findings and/or any needed labeling changes.

* * * 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
178397	EFGB/CRS3	05/21/92	06/15/92	Y	N	Y

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