AUG 10 1994

DP Barcode : DD205600
PC Code No : 129121
EEB Out :

To: Robert Brennis
Product Manager 10
Registration Division (7505C)

From: Anthony F. Maciorowski, Chief
Ecological Effects Branch/EFED (7507C)

Attached, please find the EEB review of...

Reg./File # :264-LLN
Chemical Name :Fipronil
Type Product :Insecticide
Product Name :Chipco Gauntlet 0.1G
Company Name :Rhone-Polenc Ag Company
Purpose :New Chemical Screen use on Turf

Action Code :010 Date Due : 8/4/94
Reviewer : A. Bryceland

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)	432917-19		72-7(A)		
71-1(B)			72-2(B)			72-7(B)		
71-2(A)			72-3(A)	432917-02		122-1(A)		
71-2(B)			72-3(B)	432917-01		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)	432917-23,24,25		124-2		
72-1(B)			72-5			141-1		
72-1(C)	432917-18		72-6			141-2		
72-1(C)						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

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

AUG 10 1994

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

MEMORANDUM

To: Robert Brennis
Registration Division (7505C)

From: Anthony F. Maciorowski, Chief
Ecological Effects Branch
Environmental Fate and Effects Division (7507C)

Subject: New Chemical Screen-Expedited Review for Fipronil Insecticide (Fipronil Technical: sulfoxide 5-amino-1-[2,6-dichloro-4-trifluoromethly)phenyl]-4-[(1R,S)-(trifluoromethyl)sulyfinyl]-1H-pyrazole-3-carbonitrile

Ecological Effects Branch (EEB) has reviewed aquatic plant, fish, and wildlife toxicity data submitted by Rhone-Poulenc Ag Company to support registration of Fipronil insecticide. The registrant has submitted ten avian, eight aquatic invertebrate, seven fish, and five aquatic plant studies to support the proposed use on turf (terrestrial/nonfood use). A number of these studies were conducted with the degradates of Fipronil (ie; RPA104615). The acceptance of these studies has not been addressed in this new chemical screen memo.

The LD_{50} values for mallards and bobwhite are 2150 ppm a.i.(active ingredient) (practically non-toxic) and 11.3 ppm a.i. (very highly toxic), respectively. The LC_{50} values for mallards and bobwhite are >4480 ppm a.i. (practically non-toxic) and 48 ppm a.i. (very highly toxic), respectively.

In the mallard duck reproduction study the NOEC (no observable effect concentration) was 1000 ppm a.i. The bobwhite quail reproduction study does not fulfill guideline requirements because a Low Observable Effect Concentration (LOEC) could not be determined from the range of test concentrations. The NOEC for the bobwhite study was 10 ppm a.i. All of the avian studies above have been fully reviewed by EEB (Table 1; excerpted from the Fipronil EUP for use on cotton).

AVIAN TEST RESULTS

TABLE 1.

2

GLN #	TEST TYPE	MRID	EVALUATION DATE	CLASSIF.	% A.I.	TEST DATE	RESULT
71-1A	Mallard, Acute Oral LD_{50}	429186-16	1/5/94	Core, Practically Non-Toxic	96.8	1993	LD_{50} = >2150 mg ai/kg
71-1A	Quail, Acute Oral LD_{50}	428186-17	1/4/94	Core, Highly Toxic	96	1993	LD_{50} = 11.3 mg ai/kg
71-1A	Quail, Acute Oral LD_{50}	429186-19	1/13/94	Supp., Highly Toxic	1.6	1993	LD_{50} = 17.0 mg ai/kg
71-2B	Mallard, Acute Dietary LC_{50}	429186-21	1/14/94	Core, Slightly Toxic	>95	1993	LC_{50} = 4480 ppm ai
71-2A	Quail, Acute Dietary LC_{50}	429186-20	1/12/94	Ann -			LC_{50} = 48.0 ppm ai
71-4B	Mallard Avian Repro.	429186-23	4/8/94	Same errors		3	NOEC= 1000 ppm ai
71-4A	Quail, Avian Repro.	429186-22	5/16/94	- NICK		3	NOEC> 10 ppm ai

The acute LC_{50} freshwater v out, bluegill sunfish, and *Daphnia magna* are 3 ly toxic), 25 µg a.i./l (very highly toxic), (very highly toxic), respectively (Table 2; e pronil EUP for use on cotton). Additional aqua submitted by the registrant but their accepta ermined on the technical grade or it's degradate.

Aquatic Invertebrates and Fish Results

TABLE 2.

GLN #	TEST TYPE	MRID	EVALUATION DATE	CLASSIF.	% A.I.	TEST DATE	RESULT
72-1C	Rainbow Trout LC_{50}	429779-02	1/10/94	Core, Highly Toxic	100	1991	LC_{50} = 246 µg/L
72-1C	Rainbow Trout LC_{50}	429186-73	1/11/94	Core, Very Highly Toxic	99.2	1993	LC_{50} = 39 µg/L

72-4A	Rainbow Trout, Fish Early Life-Stage	429186-27	3/9/94	Core	96.7	1992	MATC= 9.9 µg/L
72-1A	Bluegill, LC_{50}	429186-24	1/10/94	Core, Very Highly Toxic	100	1991	LC_{50} = 83 µg/L
72-1A	Bluegill, LC_{50}	429186-74	1/12/94	Core, Very Highly Toxic	99.2	1992	LC_{50} = 25 µg/L
72-4B	Life-Cycle Aquatic Invertebrate (*D. magna*)	429186-26	3/10/94	Invalid	100	1990	N/A
72-4B	Life-Cycle Aquatic Invertebrate (*D. magna*)	429186-70	3/3/94	Invalid	100	1990	N/A
72-4B	Life-Cycle Aquatic Invertebrate (*D. magna*)	429186-72	3/4/94	Invalid	99.2	1992	N/A
72-2A	Daphnia magna, EC_{50}	429186-25	1/12/94	Invalid	100	1990	NA
72-2A	Daphnia magna, EC_{50}	429186-69	1/13/94	Core, Very Highly Toxic	100	1990	EC_{50} = 92.6 µg/L
72-2A	Daphnia magna, EC_{50}	429186-71	1/13/94	Core, Very Highly Toxic	100	1990	EC_{50} = 29 µg/L

The only estuarine studies that have been submitted to date by the registrant are for acute flow-through sheepshead minnow (72-3a) and acute flow-through oyster (72-3b). The recent submissions have not been fully reviewed. Upon cursory examination of these study the LC_{50}s, reported by the registrant, are 130 µg a.i./l (highly toxic) and greater than 0.77 mg a.i./l (highly toxic), respectively.

The acute aquatic plant LC_{50}s (Table 3; excerpted from the EUP on Fipronil for use on cotton) are as follows:

Aquatic Plants

Table 3.

GLN#	TEST TYPE	MRID	EVALUATION DATE CLASSIF.	% AI	TEST DATE	RESULT

122-2	Freshwater Green Alga[1], Aquatic Plant-Tier 1	429186-60	1/6/94	Core	96.1	1993	EC_{50} = 0.14 mg/l
122-2	Freshwater Blue-Green[2] Alga, Aquatic Plant-Tier 1	429186-57	1/6/94	Core	96.1	1993	EC_{50} = >0.17 mg/l
122-2	Marine Diatom[3], Aquatic Plant-Tier 1	429186-59	1/7/94	Core	96.1	1993	EC_{50} = >0.14 mg/l
122-2	Duckweed[4], Aquatic Plant-Tier 1	429186-56	1/7/94	Supp	96.1	1993	EC_{50} = >0.10 mg/l
122-2	Freshwater Green Alga[5], Aquatic Plant-Tier 1	429186-58	1/7/94	Supp	96.1	1993	EC_{50} = >0.12 mg/l

Listed below in Table 4 are the guideline requirements that have been fulfilled and what may be required.

Table 4.

Required Studies	Requirement Fulfilled (Y or N)	
	Fipronil Technical	MPA104615 K salt
Avian Oral LD_{50} (Bobwhite or Mallard) 71-1	Y[1] (Bobwhite and Mallard)	
Avian Dietary LC_{50} (Bobwhite and Mallard) 71-2	Y[1] (Bobwhite and Mallard)	
Avian Reproduction (Bobwhite and Mallard) 71-4	Y[1] (Mallard)and [suppl.[3]] (Bobwhite)	
Acute Freshwater Fish LC_{50} (Bluegill and Rainbow) 72-1	Y[1] (Bluegill and Rainbow)	Y[2] (Rainbow)

[1] *Selenastrum capricornutum*

[2] *Anabaena flos-aquae*

[3] *Skeletonema costatum*

[4] *Lemna gibba*

[5] *Navicula pelliculosa*

Acute Freshwater Invertebrate LC_{50} (*D. magna*) 72-2	Y[1] (*D. magna*)	Y[2] (*D. magna*)
Acute LC_{50} Marine/Estuarine Fish 72-3	Y[2] (Sheepshead)	
Acute LC_{50} Marine/Estuarine Mollusk/Shrimp 72-3	Y[2] (Mollusk)	
Fish Early Life Stage (Freshwater) 72-4	Y[1] (Rainbow)	
Aquatic Invertebrate Life-Cycle (Freshwater) 72-4	N[4] (*D. magna*)	
Fish Early Life Stage (Marine) 72-4	N[5]	
Aquatic Invertebrate Life-Cycle (Marine) 72-4	N[5]	

[1]Studies have been reviewed and have met guideline requirements. [2]Studies have not been reviewed but have been submitted. [3]Suppl.=Supplemental; Study has been reviewed but has not met guideline requirements. [4]Study was reviewed and did not fulfill the guideline requirement. [5]Request for data pending results from acute mar./est. studies and environmental fate data.

Due to the absence of the chronic avian (bobwhite reproduction), chronic freshwater invertebrate (Daphnia life-cycle), and acute marine/estuarine invertebrate (mysid shrimp), the requirements for the new chemical screen have not been fulfilled. These studies are required in order to support the proposed use of Fipronil on turf. Therefore Fipronil fails the new chemical screen.

If you have any questions about this review contact Andrew Bryceland at (703) 305-7347.

DP BARCODE: D205600

CASE: 044677 DATA PACKAGE RECORD DATE: 07/19/94
SUBMISSION: S470048 BEAN SHEET Page 1 of 1

* * * CASE/SUBMISSION INFORMATION * * *

CASE TYPE: REGISTRATION ACTION: 010 NEW CHEMICAL SCREENING
RANKING : 0 POINTS ()
CHEMICALS: 129121 Fipronil 0.1040%

ID#: 000264-LLN CHIPCO GAUNTLET 0.1G
COMPANY: 000264 RHONE-POULENC AG COMPANY
PRODUCT MANAGER: 10 ROBERT (BOB) BRENNIS 703-305-6788 ROOM: CM2 210
PM TEAM REVIEWER: DAPHNE WALDO 703-305-6502 ROOM: CM2 212
RECEIVED DATE: 06/30/94 DUE OUT DATE: 07/10/94

* * * DATA PACKAGE INFORMATION * * *

DP BARCODE: 205600 EXPEDITE: Y DATE SENT: 07/19/94 DATE RET.: / /
CHEMICAL: 129121 Fipronil
DP TYPE: 001 Submission Related Data Package
CSF: Y LABEL: Y

ASSIGNED TO	DATE IN	DATE OUT
DIV : EFED	07/19/94	/ /
BRAN: EEB	07/20/94	/ /
SECT: IO	/ /	/ /
REVR :	/ /	/ /
CONTR:	/ /	/ /

ADMIN DUE DATE: 07/29/94
NEGOT DATE: 08/11/94
PROJ DATE: / /

* * * DATA REVIEW INSTRUCTIONS * * *

Dear Reviewer,
Attached you will find data which has been submitted to support a Section 3 application. Please note that 90+ studies had been submitted prior to this application in support of an EUP for this new chemical. If you need additional information, please contact me at 305-6502.

Thank you,

Daphne Waldo
Reviewer, PM Team 10

* * * 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
205580	RSB/PCRS	07/19/94	07/29/94	Y	Y	Y
205586	EFGB/IO	07/19/94	07/29/94	Y	Y	Y