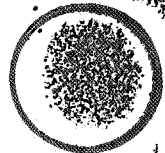




UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460



Atrazine / Review #41/8.11.81/6 pages

Releasable

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

AUG 11 1981

MEMORANDUM

DATE: July 16, 1981

SUBJECT: PP#1E2499; Atrazine on Orchardgrass (AAtrex 80W).
EPA Reg. #100-439; Minor Use Tolerance of 0.25 ppm
CASWEL #63 Accession#700211

FROM: Amal Mahfouz, Toxicologist
Toxicology Branch, HED (TS-769)

Amal Mahfouz
7/16/81

TO: Minor Use Officer
Registration Division (TS-767)

WDD for LOC
7/17/81

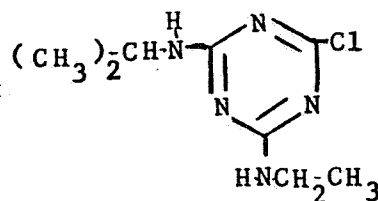
THRU: Christine F. Chaisson, Acting Chief
Toxicology Branch, HED (TS-769)

dfi WTB

Petitioner: IR-4 National Director, Dr. R.H. Kupelian
on behalf of the IR-4 Technical Committee
and the Agricultural Experiment Station
of Oregon.

Registrant: Ciba-Geigy

Chemical Structure:



2-chloro-4 ethylamino-6-isopropylamino-1,3,5 triazine

Synonyms:

AAtrex (Ciba-Geigy), Atranex, Atred, Crisatrina, Crisazine, Shell
Atrazine Herbicide, Vectal SC.

Action Requested

The petitioner proposed the establishment of a 0.25 ppm tolerance for residues of the herbicide atrazine (2-chloro-4-methylamino-6-isopropylamino-5-triazine) and its metabolites 2-amino-4-chloro-6-ethylamino-s-triazine, 2-amino-4-chloro-6-isopropyl-amino-s-triazine and 2-chloro-4,6-diamino-s-triazine in or on the raw agriculture commodities orchardgrass straw and chaff. The formulation designated for this minor use is AAtrex 80W.

Recommendation

Toxicology Branch has no objection to establishing the proposed tolerance of 0.25 ppm for residues of Atrazine in or on orchardgrass straw and chaff. This recommendation is based on the following rationale:

1. Pursuant to 40 CFR 180.220 tolerances have been already established of 0.02 ppm for residues of Atrazine in meat, milk, poultry and eggs; and up to 15 ppm in animal feed items. Consequently issuance of the requested tolerance on orchardgrass will not result in an increase of the dietary exposure to Atrazine.
2. Existing toxicity data support this minor use tolerance.

However we are requesting that a teratology study be provided in support of future tolerances.

Related Petitions and Tolerances:

Related Petitions: PP#7F0525 and PP#4F1425

Existing Tolerances: 40 CFR 180.220

Detailed Considerations

Formulation

AAtrex 80W is a wettable powder which contains 82.50% technical Atrazine (92.15% Atrazine + 4.85% related active products). The question of possible nitrosamines occurring from the manufacture and use of Atrazine apparently has been resolved according to the following note, stated in a 4/7/78 review by W. Greear:

"In a memo from the Chief of the Fungicide-Herbicide Branch dated 2/23/78, it was indicated that Atrazine, manufacturing by Ciba-Geigy, is no longer in the hold category (due to possible nitrosamine contamination) and such products may be processed".

All inerts are cleared under 180.1001.

Proposed Use

Atrazine is to be broadcast at 2 lb a.i./A (2.5 lb AAtrex 80W) in at least 15 gals of water to established orchardgrass grown for seed only, from which seed crop has been harvested (no more than 2 years in succession). Atrazine is to be applied to the field which has been burned after the first fall rain. There is a restriction against grazing treated land within 4 months of application and against planting treated land to other crops for 16 months. This use is for the Pacific Northwest only.

Toxicity Data

Acute toxicity data for Atrazine 80W have been reviewed by W. Greear (8/29/77 memo) and S.A. Sterling (10/1/79 memo). Chronic toxicity data with Atrazine 80W and 50W were reviewed by R.D. Coberly on 7/10/68 and reflected the following NOELs:

- °Two-Year Chronic Feeding/Oncogenic - Rat (50W) NOEL = 100 ppm
- °Two-Year Chronic Feeding - Dog (80W) NOEL = 150 ppm
- °3-Generation Reproduction - Rat (80W) NOEL = 100 ppm

The present Allowable Daily Intake (ADI) of 0.0375 mg/kg/day is based on the 2-year dog feeding study with NOEL = 150 ppm and a 100 fold safety factor. Based on this ADI the Maximum Permissible Intake (MPI) is 2.25 mg/day/60 kg man. The Theoretical Maximal Residues Contribution (TMRC) of the existing tolerances is 0.0770 mg/day/1.5 diet.

This TMRC reflects 3.42% of the MPI and include a 0.02 ppm tolerances for eggs; milk and dairy products; and meat. Consequently the requested action will not increase the present TMRC (see attached Printout).

No new toxicity data were submitted. All toxicity data considered for this action are summarized in the toxicity table (attached to this review).

Data Gaps

Data gap exist for this chemical:

1. Two teratology studies in two rodent species (preferably the rat and rabbit).
2. One oncogenicity study in mice (using the technical material).

The teratology data gap was previously reported by C. Frick (2/21/79 memo). A 6/4/81 memo by D. Ritter reported both the above data gaps (1 and 2) and stated that one teratology study should be submitted to support future tolerances.

A neurotoxicity study in rat or chicken including the effect on cholinesterase and monoamineoxidase (MAO) activity is requested for Atrazine. A recent publication (J. SCI. MED. LILLE (FRANCE, 1979) indicates the manifestation of neurological symptoms upon chronic exposure to Atrazine in a 43 years old man. Submit protocol to EPA concurrence prior to initiation of the study.

Finally no pending regulatory actions are present against this chemical.

TOXICITY SUMMARY

<u>Study</u>	<u>Formulation</u>	<u>Results</u>	<u>Category</u>	<u>Core Classification</u>
Acute Oral - rat °IBT, 6/4/65 °WiL#1173-78, 8/24/78	80W	°LD ₅₀ = 5.1 + 0.4 g/kg °LD ₅₀ > 2 g/kg but < 2.5 g/kg Depression, diarrhea, depressed righting and placement reflexes	III III	Minimum Minimum
Acute Dermal - Rabbit °IBT, 6/4/65 °WiL#1173-78, 7/13/78	80W	°LD ₅₀ = 9.3 + 0.9 g/kg °LD ₅₀ > 2 g/kg	III III	Minimum Minimum
Primary Eye Irritation - Rabbit °IBT, 6/4/65 °WiL#1173-78, 7/5/78	80W	°Corneal opacity in 2/5 animals for 24 hrs. conjunctivae irritation. °Corneal opacity in 3/6 animals, conjunctival irritation in all animals with clearing by day 7.	II II	Minimum Guideline
Primary Dermal Irritation Rabbit °IBT, 6/4/65 °WiL#1173-78, 7/21/78	80W	°PIS = 0.5/8.0 °PIS = 0	IV IV	Minimum Guideline
Dermal Sensitization - Guinea Pig WiL#1173-78, 8/21/78	80W	Only 3 injection were performed instead of the required 10 injections.		Supplement
Acute Inhalation - Rat °Woodard Res. Cor. 3/16/62 °IBT#663-5239, 6/13/74	80W	°LD ₅₀ > 2 mg/L/1 hr. °LD ₅₀ > 0.2 mg/L/1 hr.	III	Minimum Supplement (single dose tested)
2-Year Feeding/Oncogenic - Rat Hazelton Lab. 2/10/61	50W	NOEL = 100 ppm		Not Core g
2-Year Feeding - Dog Woodard Res. Lab. 10/27/64	80W	NOEL = 150 ppm		Not Core g
3-Generation Reproduction- Rat Woodard Res. Lab. 6/29/66	80W	NOEL > 100 ppm (highest level tested)		Not Core g
Mutagenicity - Micro-organisms Mutation Research 1976	Technical	Negative		Acceptabl

File last updated 4/10/81

ACCEPTABLE DAILY INTAKE DATA

Dog	NOEL	S.F.	ADI	NPI
mg/kg	ppm		mg/kg/day	mg/day (60kg)
3.750	150.00	100	0.375	2.2500

Published Tolerances

CROP	Tolerance	Food Factor	mg/day (1.5kg)
Corn, all types (38)	0.250	2.51	0.00941
Macadamia nuts (87)	0.250	0.3	0.00011
Pineapple (123)	0.250	0.30	0.00111
Sorghum (147)	0.250	0.03	0.00011
Sugar, cane/beet (154)	0.250	3.64	0.01364
Wheat (170)	0.250	10.36	0.03886
Eggs (54)	0.020	2.77	0.00083
Milk & Dairy Products (93)	0.020	28.62	0.00858
Meat, inc poultry (89)	0.020	13.95	0.00415
Pellet (94)	0.250	0.03	0.00011

NPI	THRC	% ADI
2.2500 mg/day (60kg)	0.0769 mg/day (1.5kg)	3.42

Current Action 0E2390

CROP	Tolerance	Food Factor	mg/day (1.5kg)
Guava (134)	0.250	0.03	0.00011

NPI	THRC	% ADI
2.2500 mg/day (60kg)	0.0770 mg/day (1.5kg)	3.42
