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

RCB
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File: PP# 1G2438

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MAR 06 1981

MEMORANDUM

SUBJECT: EPA Reg.#464-EUP-RV; PP#1G2438; Chlorpyrifos in or on Wheat
CASWELL#219AA; Accession#099714-5

FROM: William Dykstra, Toxicologist
Toxicology Branch, HED (TS-769)

WRD for LOC 3/5/81

TO: Jay Ellenberger (12)
Registration Division (TS-767)
and
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

Recommendations:

1) The requested tolerance and EUP program can be toxicologically supported.

EUP-program: The pesticide will be used only in the states of Kansas, Minnesota, and South Dakota. Not more than 600 acres total of wheat (200 acres per state) will be treated nor more than 225 gallons of Lorsban 4E insecticide (75 gallons per state) applied. It is proposed that the permit run from April, 1981 to April, 1982, a period of one year.

Section F - Proposed Tolerance

The petitioner requests that establishment of a tolerance for combined residues of chlorpyrifos and its metabolite 3,5,6-trichloro-2-pyridinol in or on the following:

wheat	0.15 ppm
wheat straw	1.5 ppm
milling fraction (except flour)	0.5 ppm

Review:

1) No new toxicity data were submitted with this petition.

2) The formulation proposed for use is Lorsban 4E (EPA Reg.#464-448). The inert ingredients are cleared under 180.1001.

3) Tolerances are established under 40 CFR 180.342.

4) Previously Submitted Toxicity Data

°Acute Rat Oral - LD_{50} = 118-245 mg/kg
°180-Day Rat Feeding Study: RBCChE NOEL = 0.15 mg/kg/day
Systemic NOEL = 0.75 mg/kg/day
(highest dose)
°90-Day Dog Feeding Study: RBCChE NOEL = 0.03 mg/kg/day
Systemic N OEL = 20 ppm
°Mouse Teratology: negative at 25 mg/kg/day (highest dose)
°3-Generation Rat Reproduction Study: NOEL = 1.0 mg/kg/day
(highest dose)
°Acute Delayed Neurotoxicity (hen): negative at 100 mg/kg
°2-Year Mouse Oncogenicity Study: negative at 15 ppm
(highest dose)
°2-Year Rat Feeding Study: RBCCHE NOEL = 0.1 mg/kg/day
Systemic NOEL = 3.0 mg/kg/day
(highest dose)
Oncogenic potential: negative
°2-Year Dog Feeding Study: RBCChE NOEL = 0.1 mg/kg/day
Systemic NOEL = 3.0 mg/kg/day
(highest dose)

5) The ADI is based on the RBCChE NOEL of 0.1 mg/kg/day in the 2-year rat feeding study. This is the most sensitive species for which chronic toxicity are available. A 10-fold safety factor was used to calculate the ADI.

$$ADI = NOEL \times \frac{1}{10}$$

$$ADI = 0.1 \text{ mg/kg/day} \times \frac{1}{10} \times 0.01 \text{ mg/kg/day}$$

The MPI for a 60 kg person is 0.6 mg/day

6) Published tolerances utilize 41.29% of the ADI. Unpublished, Toxicology Branch approved tolerances utilize the ADI to 74.23%. The current action utilizes 3.88% of the ADI. All tolerances utilize 78.11% of the ADI (computer printout attached).

Conclusions and Recommendations:

The requested tolerance can be toxicologically supported.

TS-769:th:WDYKSTRA:3-5-81:#3

CFR 180.342 Chlorpyrifos 3/4/81

File last updated 3/5/81

ACCEPTABLE DAILY INTAKE DATA

RAT,Older mg/kg	NOEL ppm	S.F.	ADI mg/kg/day	MPI mg/day(60kg)
0.100	2.00	10	0.0100	0.6000

Published Tolerances

CROP	Tolerance	Food Factor	mg/day(1.5kg)
Bananas(7)	0.050	1.42	0.00107
Beans,lima(11)	0.000	0.19	0.00000
Beans,snap(12)	0.000	0.98	0.00000
Cattle(26)	1.500	7.18	0.16165
Corn,all types(38)	0.100	2.51	0.00377
Cottonseed(41)	0.500	0.15	0.00112
Eggs(54)	0.010	2.77	0.00042
Goats(62)	0.100	0.03	0.00005
Hogs(69)	0.100	3.43	0.00515
Milk&Dairy Products(93)	0.010	28.62	0.00429
Peaches(114)	0.050	0.90	0.00067
Poultry,exc chic(129)	0.010	0.04	0.00001
Chicken(31)	0.010	2.58	0.00039
Sheep(145)	0.100	0.19	0.00029
Turkey(164)	0.200	0.33	0.00098
Almonds(1)	0.050	0.03	0.00002
Apples(2)	0.050	2.53	0.00190
Sugar,cane&beet(154)	0.200	3.64	0.01091
Pears(116)	0.050	0.26	0.00019
Plums,not prunes(124)	0.050	0.09	0.00007
Sweet Potatoes(157)	0.100	0.40	0.00060
Sorghum(147)	0.750	0.03	0.00034
Molasses(96)	3.000	0.03	0.00138
Broccoli(19)	2.000	0.10	0.00307
Cabbage,sauerkraut(22)	2.000	0.74	0.02207
Cauliflower(27)	2.000	0.07	0.00215
Rutabagas(139)	3.000	0.03	0.00135
Tomatoes(163)	0.500	2.87	0.02156
Radishes(133)	3.000	0.03	0.00135
Nectarines(100)	0.050	0.03	0.00002
Brussel Sprouts(20)	2.000	0.03	0.00090

MPI	TMRC	% ADI
0.6000 mg/day(60kg)	0.2477 mg/day(1.5kg)	41.29

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Unpublished,Tox Approved PP#6F1786,9F2193,9F2221,9H5227,9F2270,0E2283,0E2387,0E2411

CROP	Tolerance	Food Factor	mg/day(1.5kg)
Prunes(130)	0.050	0.04	0.00003
All foods(197)	0.025	100.00	0.03750
Oranges(108)	2.500	2.17	0.08125
Lemons(82)	2.500	0.17	0.00652
Peanuts(115)	0.500	0.36	0.00268
Apples(2)	0.950	2.53	0.03605
Cucumbers,inc pickl(46)	0.050	0.73	0.00054

Pumpkin,inc squash(131)	0.050	0.11	0.00008
Seed&Pod Veg(143)	0.050	3.66	0.00274
Soybeans(148)	1.000	0.92	0.01377
Goats(62)	0.900	1.03	0.00041
Sheep(145)	0.900	0.19	0.00262
Strawberries(152)	0.300	0.18	0.00083
Mint(193)	10.000	0.03	0.00450
Onion(dry bulb)(106)	0.500	0.72	0.00537
Turnips(165)	3.000	0.05	0.00230
Turnip Greens(166)	1.000	0.03	0.00045

MPI	TMRC	% ADI
0.6000 mg/day(60kg)	0.4454 mg/day(1.5kg)	74.23

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Current Action PP# 1G2438

CROP	Tolerance	Food Factor	mg/day(1.5kg)
Wheat(170)	0.150	10.36	0.02332

MPI	TMRC	% ADI
0.6000 mg/day(60kg)	0.4687 mg/day(1.5kg)	78.11

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