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

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

DATE MAR 31 1982

900AA

SUBJECT: Larvin on soybeans and cottonseed - resubmission - 264-EUP-AN, 264-EUP-AR, 2G2581, 2H5325.

FROM: Sue S. Rathman
Toxicology Branch, HED (TS-769) Sue S. Rathman 3/30/82

TO: Jay Ellenberger, PM #12
Registration Division (TS-767)

This Action, received in TOX on 2/2/82, is being returned to you since it has already been reviewed (see attached review, Dykstra, dated 3/9/82).

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MEMORANDUM MAR 9 1982

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

DATE: March 4, 1982

SUBJECT: Larvin; 264-EUP-AR, 264-EUP-AN; PP#2G2581, 2H5325;
Larvin in/on cotton and Soybeans CASWELL#900AA

FROM: William Dykstra, Toxicologist
Toxicology Branch/HED (TS-769) WED EDC 3/4/82

TO Jay Ellenberger (12)
Registration Division (TS-767) ltr for ERP 3/8/82
and
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

Recommendation:

1. The temporary tolerances and EUP program can be toxicologically supported.

Review:

1. Section F

The petition proposes that the following Temporary Pesticide and Feed Additive tolerances be established for the combined residues of Thiodicarb, Dimethyl N,N'-[thiobis(methylimino)carbonyloxy]bis[ethanimidothioate], and its metabolite methomyl, N-[(methylcarbamoyl)oxy] thioacetimidate).

Pesticide Tolerances:

cottonseed	0.4 parts per million
soybeans (seed)	0.1 parts per million

Feed Additive Tolerances:

cottonseed hulls	0.8 parts per million
soybeans hulls	0.4 parts per million

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2. Toxicity Data which support the EUP program and temporary tolerances.

°Rat oral LD_{50} = 325 mg/kg
°Rat teratology: negative at 30 mg/kg/day; fetotoxic NOEL = 3.0 mg/kg/day
°Mouse teratology: negative at 200 mg/kg/day; fetotoxic NOEL = 200 mg/kg/day
°90-Day rat: ChE NOEL = 10 mg/kg/day; systemic NOEL = 3 mg/kg/day
°6-Month dog: ChE NOEL = 15 mg/kg/day; systemic NOEL = 15 mg/kg/day
°Acute delayed neurotoxicity: negative at 660 mg/kg

3. Toxicity data submitted with this petition.

a. Preliminary report of the effects of Larvin (US 51762) on cholinesterase activity in a 28-day dietary inclusion study in rats (Busy Run Research Center; Project#81-03-18301; 11/10/81)

Groups of 10 male and 10 female Fischer 344 rats were fed dietary levels of 0, 1.0, 3.0, 10.0 and 30.0 mg/kg/day of Larvin in the diet for 28 days. Body weight and food consumption were measured weekly. Parameters measured at 7, 14 and 28 days included packed cell volume, total plasma protein, plasma and erythrocyte cholinesterase activity. Brain cholinesterase was determined after 28 days.

Results: Plasma and RBC cholinesterase was significantly decreased in male rats at the 30 mg/kg/day dosage level at 7 and 14 days. In female rats, RBC cholinesterase was significantly decreased at 7, 14 and 28 days. Plasma cholinesterase was significantly decreased in females at 14 days. Food consumption and body weight gain were significantly decreased at 30 and 10 mg/kg/day during the study in female rats.

Conclusion: The NOEL for cholinesterase inhibition is 10 mg/kg/day.

Classification: Supplementary Data

(a) Only summarized results were provided.

4. Calculation of the PADI

The provisional ADI is based on the systemic NOEL of 3.0 mg/kg/day in the 90-day rat feeding study. A 2000 fold safety factor is used to calculate the PADI.

$$\text{PADI} = 3.0 \text{ mg/kg/day} \times \frac{1}{2000}$$

$$\text{PADI} = 0.0015 \text{ mg/kg/day}$$

The PMPI for a 60 kg person is 0.09 mg/day.

5. The temporary tolerances utilize 2.53% of the PADI.

Conclusions and Recommendations:

The EUP program and temporary tolerances can be toxicologically supported.

TS-769:th:TOX/HED:WDykstra:3-4-82:card 8

No CFR Number Larvin . 3/4/82

File last updated 3/4/82

ACCEPTABLE DAILY INTAKE DATA

RAT, Older NOEL		S.F.	PADI	MPI
mg/kg	ppm		mg/kg/day	mg/day(60kg)
3.000	60.00	2000	0.0015	0.0900

Current Action PP# 2G2581

CROP	Tolerance	Food Factor	mg/day(1.5kg)
Cottonseed (oil)(41)	0.400	0.15	0.00090
Soybeans (oil)(148)	0.100	0.92	0.00138

MPI	THRC	% ADI
0.0900 mg/day(60kg)	0.0023 mg/day(1.5kg)	2.53

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