UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

JUN 26 1980

001915

SUBJECT: EPA Reg. No. 432-487, Technical Resmethrin (SBP-1382), Rat Teratology Study.

TOX Chem. #83E

FROM: John Doherty 6/19/80
Toxicology Branch/HED (TS-769)

TO: T. D. R. Gee, PM #17
Registration Division (TS-767)

Action Requested:

Review rat teratology study to support registrations/tolerances with resmethrin.

Conclusion:

Accept the study as a valid demonstration that resmethrin is not a teratogen in this strain of rat at doses up to and including 80 mg/kg. The NOEL for fetotoxicity is 40 mg/kg.

Detailed Review of Study

Identification of Study

Teratologic Evaluation of SBP-1382 Technical in the Albino Rat:

Booz, Allen and Hamilton, Inc., Foster D. Snell Division; Florham Park, NJ; (Project #2054-066); Nov. 26, 1979; EPA Accession No. 241765, -66, -68, -69, and -70.

5 groups of BIU:(SD) BR female rats approximately 13 weeks of age were mated (3:1) with males of the same strain. Each group consisted of 25 females and were administered the following doses in Mazola corn oil: 0, 20, 40, 80 mg/kg of resmethrin, or 250 mg/kg of aspirin. Dosing was by gavage on days 6 through 15 of gestation. The rats were sacrificed on day 20 of gestation and the dams and pups examined.

Results:

A. Dam Data

1. Mortality. No dose related deaths although across the groups 18 of 125 died. 14 deaths were attributed to dosing mechanical artifacts. All animals were reported as being thrifty throughout the study.

2. Body weight and food consumption. The study shows that food consumption during treatment for all resmethrin treated groups was generally lower than controls. For the 11-15 day interval, food consumption for all groups dosed with resmethrin was statistically significantly lower. Only the high dose group demonstrated a significantly lower body weight.

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3. *Litter reproduction data. No statistically significant differences were noted with respect to number of live litters, fetuses/dam, fetus weight, resorptions/dam or weights of gravid uteri. Necropsy of the resmethrin treated dams at sacrifice was not remarkable.*

B. *Pup Data*

1. *Gross and soft tissue abnormalities. No resmethrin related abnormalities were noted.*

2. *Skeletal findings (2/3 of fetuses). No significant differences were reported. This reviewer notes that there were higher frequencies of missing sternebrae for the mid and high dose resmethrin treated groups. For example:*

Dose	Frequency*
0	0.66
20 mg/kg	0.48
40 mg/kg	0.96
80 mg/kg	1.22

**Frequency = total incidences of missing sternebrae (including manubrium, second, third, fourth, and fifth, and xiphisternum) divided by the number of pups examined.*

Other skeletal differences noted by this reviewer were (for the highest dose group only):

Skeletal Fault	% of Pups with Skeletal Fault	
	Control	High Dose
Partial skull	1.6%	8.1%
Distal metacarpels	7.5%	19.1%
Incompletely ossified metacarpels	0	6.6%
Incompletely ossified metatarsels	0	3.4%

For these parameters, the low and mid dose were essentially equivalent to the control.

These skeletal findings indicate a slight fetotoxic effect.

C. Treatment with the positive control (aspirin) resulted in a variety of teratogenic effects as noted in both the soft tissue and skeletal data tables.

Discussion:

This test is Core-Guidelines. Resmethrin did not exhibit a teratogenic effect. A slight fetotoxic effect, as evident by the aberrations in the skeletal findings, was noted in 80 mg/kg test group pups.

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