#160

Carbaryl

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

SUBJECT: 8.5% Carbaryl Flea Collar for Cats

DATE: JAN 30 1976

FROM: Toxicology Branch

TO: Mr. Frank Sanders

Registration #2724-272

Thuron Industries
12200 Denton Drive
Dallas, Texas 75234

Recommendation: Toxicology Branch now is able to recommend in favor of registration for this cat collar.

The following cholinesterase inhibition study was submitted in response to Toxicology Branch's objections (D. M. Reisa, 7-29-75) regarding the invalidity of the previously submitted study. Originally, the electrometric (ΔpH) method as modified by Frawley was used. This method has been shown to be unacceptable for determining cholinesterase inhibition by carbamates. An alternative titrimetric as well as the incorporation of a DDVP control group and a larger test population was suggested.

Rate of release of carbaryl from F-68-118-3 cat collar

Time (weeks)	Grams active lost/week
Initial	0
2	0.0964
3	0.0819
6	0.0662
9	0.0550
12	0.0503
15	0.0429
18	0.0378

Cholinesterase Inhibition in Cats
Method used: pH-Stat Method (Titrimetric)

Group	# of animals	
	Males	Females
Controls	3	5
8.5% carbaryl collars	5	7
4.75% DDVP collars	3	3

EPA Form 1320-6 (Rev. 6-72)

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Samples taken:

-8, -6, -3, 0, 2, 4, 7, 12, 14 days

Results: Cats wearing the 4.75% DDVP collars experienced a mean decrease of 52% in plasma cholinesterase at day 4, and a 70% decrease in plasma cholinesterase at day 7. Values for both plasma and RBC cholinesterase remained low at 14 days.

Cats wearing the 8.5% carbaryl collar experienced a 20% mean decrease in RBC cholinesterase at day 7, and an 11% decrease in plasma cholinesterase at day 4.

Diana M. Reisa

Diana M. Reisa, Ph.D.
Toxicology Branch
Registration Division

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