

#160 UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Carbaryl

SUBJECT: 16% carbaryl flea collar for dogs.

DATE: NOV 25 1975

FROM: Toxicology Branch

TO: Mr. Frank Sanders

Reg. No. 2724-ETG

Thuron Industries
12200 Denton Drive
Dallas, Texas 75234

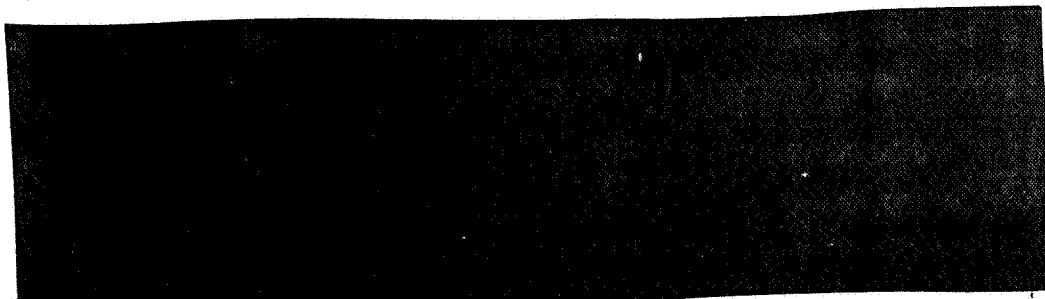
Formulation:

ACTIVE INGREDIENTS:

Carbaryl (from 97.5% Technical,
1-naphthyl N-methylcarbamate)

18.00%*

INERT INGREDIENTS:



*Includes overage to compensate for manufacturing loss.

Recommendation:

Toxicology Branch recommends that a cholinesterase inhibition study be run using the 16% collar on a suitable number of test animals of each sex. In addition, care should be exercised to include only healthy dogs in the study.

Dermal Irritation

Evaluation of dermal irritation was conducted on the 20 dogs used for efficacy evaluation. In addition, three groups of 6 dogs were fitted with multiple (2-3) collars for varying lengths of time. No dermal irritation was reported in any group. In a home-use cooperation program, however, 4/28 cooperators reported an irritative response to the collar ranging from excessive scratching to a rash.

INERT INGREDIENT INFORMATION IS NOT INCLUDED

Oral Toxicity

One dog was fed approximately 1 1/2 collars (43g-cutup and mixed with canned dog food). The dog exhibited no effects. Four days later this same dog was fed 75g of collar in the same manner. At 2 hours salivation and emesis occurred and the dog was excessively nervous between hours 3 and 4. The dog showed signs of recovering after 5 hours and was fully recovered by the next morning.

Acetyl Cholinesterase Inhibition

No new ChE inhibition data was submitted. Reference was made to a study performed on 5-6 week old puppies using a 12% carbaryl collar (4-3-73; 2724-241). Puppies were obtained from the Dallas Animal Shelter. During the first week of acclimatization to laboratory conditions, 4 puppies died from a condition reportedly resembling pneumonia.

The study was done with 5 experimentals and 5 controls. RBC and plasma ChE levels were determined 7, 5, and 3 days before collaring, as well as on Days 0, 1, 2, 3, 4, 7, 14, 28. The method used was a titrimetric method acceptable for carbamates. Average plasma cholinesterase was depressed by 30% at Day 2, followed by normal levels on Day 3. RBC ChE was unaffected.

Toxicology Branch's objections to study:

- 1) Since a 12% collar was used in this study, the data does not support the registration of a 16% collar.
- 2) The test population should be increased to at least 10 experimentals equally divided between the sexes. The inclusion of a DDVP collar positive control is strongly recommended.
- 3) Care should be exercised to include only healthy dogs in the study. Since 4 puppies died of a condition resembling pneumonia during the first week in which they were brought into the laboratory, it is reasonable to assume that the others were exposed to the same conditions and/or pathogens during their stay at the animal shelter.
- 4) Qualifications (education, training experience, responsibility) of laboratory personnel to accompany test report.

Diana M. Reisa

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

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