3-5-89

IRB BRANCH REVIEW - TSS

Record Number(s)

46779-1: 239039
239718

1/30/89
IN 2/8/89 OUT 3/5/89

EFFICACY

FILE OR REG. NO. _____

PETITION OR EXP. PERMIT NO. _____

DATE DIV. RECEIVED 1/13/89, 2/7/89

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TYPE PRODUCTS(S): I, D, H, F, N, RX S

DATA ACCESSION NO(S). none

PRODUCT MGR. NO. 16

PRODUCT NAME(S) SODIUM FLUOROACETATE (COMPOUND 1080) LIVESTOCK PROTECTION COLLAR

COMPANY NAME Rancher's Supply, Inc.

SUBMISSION PURPOSE labeling amendments, 1988 monitoring report

CHEMICAL & FORMULATION 1.04% Sodium Fluoroacetate (Compound 1080) solution in Livestock Protection Collar

1/5

Efficacy Review: SODIUM FLUOROACETATE (COMPOUND 1080) LIVESTOCK PROTECTION COLLAR, 46779-1
Rancher's Supply, Inc.
Alpine, TX 79831

200.0 INTRODUCTION

200.1 Use

A 1.04% Sodium Fluoroacetate (Compound 1080) solution enclosed in a two-pouched rubber vessel which is attached to Velcro bands which hold the patches in place in the throat regions of sheep or goats subject to predatory attacks by coyotes.

200.2 Background Information

See efficacy reviews of 11/21/86, 7/7/87, 7/11/88, 9/9/88, and 11/15/88 along with other information in the product jacket. The product was conditionally registered 12/1/87. Rancher's Supply is the source for all Livestock Protection Collars legally produced in this country The current submission from the registrant consists of copies of the technical bulletin and label revised with various additions and corrections, and a brief statment regarding collar production in 1988. The current submission from the Texas Department of Agriculture consists of TDA's report on the use of the Livestock Protection Collar in Texas in 1988.

201.0 DATA SUMMARY

All of the required text or grammatical changes requested in EPA's letters of 1/3/89 have been made. Rancher's Supply did not include copies of bilingual warning signs (which are supposed to appear as pages 15 and 16 in the technical bulletin). I found a number of additional spelling and printing errors in the bulletin. These can be corrected by the registratant at his next printing and should not require another label review (see "CONCLUSIONS"). These errors were missed in at least one earlier review.

TDA's report is the "monitoring" study that was made a condition of each of the Livestock Protection Collar registrations.

TDA reports that "280 persons received training credit" in Livestock Protection Collar certification courses. Of these, 128 (46%) "passed the written examination and obtained a license." If these data mean what they seem to, Livestock Protection Collar Certification in Texas would appear to be far from a rubber-stamp operation. It appears that the examination serves as an important screening device.

Table 1 summarizes reported data on the purchase of collars in Texas in 1988. TDA reports that 43 licensed collar applicators purchased 827 collars, for an average of slightly more than 19 collars per applicator. The nine applicators that did not use their collars were said to have bought 20 collars each for a total of 180 collars. An additional 123 collars were not used by other applicators, but nearly two thirds of all collars sold were used. The applicators who bought collars ranched in 29 different counties, but collars were actually used on only 22 Texas counties in 1988.

Table 1. Data on purchase and use of Livestock Protection Collars in Texas in 1988 as reported by the Texas Department of Agriculture.

APPLICATOR CATEGORY	NUMBER (PERCENT)	# COLLARS BOUGHT (PERCENT)
Applicators Buying Collars	43 (100%)	827 (100%)
Applicators Using Collars	34 (79%)	647 (78%) - Bought 524 (63%) - Used*
Applicators Not Using Collars	9 (21%)	180 (22%)

*Applicators who used collars used 81% of the collars that they bought.

Table 2. Data on outcomes of use of Livestock Protection Collars in Texas in 1988 as reported by the Texas Department of Agriculture.

OUTCOME CATEGORY	NUMBER	PERCENT OF ALL COLLARS USED
Punctured by Coyotes	30	5.7%
Missing/Lost as of 12/15/88	39	7.4%
Pierced/Torn by Vegetation	15	2.9%
Ruptured, Cause Unknown	4	0.8%
Torn During Removal	1	0.2%
Apparently Undamaged*	435	83.0%
Total Collars Used	524	100.0%

* Number determined by subtraction of previous 5 categories from total numbers of collars reported to have been used.

Table 2. summarizes TDA's reported data on the fates of collars used in Texas in 1988. Roughly five out of every six collars used was recovered undamaged. Puncture by coyotes was reported for about a third of the cases in which collars were damaged or lost and for three-fifths (60%) of the damaged collars that were reported as having been available for examination (presumably prior to disposal). Additional punctures by coyotes were likely in some, perhaps a majority, of instances in which collars were lost or missing.

According to TDA, 18 applicators suspected that they had killed from one to five coyotes with the toxic collar. This figure includes one account in which the rancher thought that two coyotes might have been taken by a single collar. These estimates clearly also include some cases in which evidence of a coyote-punctured collar was lacking. In addition to collars apparently punctured by coyotes, evidence used to support contentions that collars had taken coyotes included

> " . . . finding dead coyotes with dye stained teeth, missing collared livestock, cessation of predation, and other factors."

Seven dead coyotes suspected of having been taken by collars were found, including the two thought to have been killed by one collar. One lamb was apparently poisoned by 1080 from a collar that had been "ruptured from an unknown cause". Seven other collared animals were lost or detroyed without having had their collars punctured by coyotes. One of these was destroyed following contamination with 1080 solution from a collar.

Averaging results obtained through maximum and minimum estimating procedures, TDA estimated that there were over 25,000 "collar use-days" in Texas in 1988. Some ranchers apparently used collars almost prophylactically. The most efficient targeting was said to have occurred when small numbers (4-8) of collared animals were placed with larger numbers of adults.

TDA reports that it conducted inspections of 30 applicators in 1988 and that 5 more inspections were performed in January of 1989. One "significant infraction" was reported. This incident was associated with use of collars by a "non-certified" person. TDA presents some data on fates of collars by serial numbers. All collars in a series sent to Edwards county seem to have been lost. This suggests that a problem might have occurred on one ranch.

TDA concludes its report with the statement

> "Results of 1988 Livestock Protection Collar use in Texas warrant continuation of the program."

If the data reported by TDA are correct, such a conclusion is reasonable.

A cursory comparison of the data from TDA's report with those from EUP research conducted by the U. S. Department of the Interior suggests that the ratio of coyote-punctured collars to collars torn by other causes was higher in Texas in 1988 than under USDI's experimental prorgam. The proportion of all "used up" collars that were lost or missing also was higher in Texas in 1988 than in USDI's research. While it is likely that paid researchers would have more time to look for collars and dead animals than would ranchers, there may be other factors associated with the apparent differences in these numbers. With data from a few years and several states, it may be possible to draw inferences regarding the performance of certified collar applicators and the "successes" of the various programs. For the moment, it is significant that TDA appears to have monitored ranches where collars were used reasonably thoroughly and that the Department seems to have obtained reasonably good information on the performance of the collar in the state.

202.0 CONCLUSIONS

The results of the monitoring program suggest that use of the Livestock Protection Collar in Texas was rather thoroughly monitored in 1988. Although few coyotes appear to have been taken with the method, the program seems to have been successful on some ranches. That less than half of the 280 people trained in collar use passed the certification examination and obtainined a license suggests that the examination might be a very useful screening tool. One significant violation was reported. This incident allegedly involved use of collars by a person who was not certified to do so.

We note that ten collars in a series sent to Edwards County were reported to have been lost or to have lost their serial numbers. What was the cause of this apparent problem? Were all of these collars sold to the same person?

Make sure to include sample bilingual warning signs with each technical bulletin shipped with Livestock Protection Collars

A few typographical and editorial errors remain in your technical bulletin. Please correct them at your next printing and submit a copy of the corrected bulletin to EPA. The following changes are needed:

Page	Action Needed
5	Change "then" to "than" in 14th line of 2nd paragraph under "I.D.2."
6	Justify (align) last two lines of 2nd paragraph under "I.D.3." with remainder of the paragraph.
11	Change "retrive" to "retrieve" in 8th line of 2nd paragraph of Use Restriction 2.
12	In 2nd paragraph of Use Restriction 8, place "10,000" entirely on the third line, and change "th" to "than" in 8th line.
13	Align 2nd, 3rd, and 4th paragraphs with first paragraph in Use Restiction 11 Change "punture" to "puncture" in first line of last paragraph of Use Restriction 13.

William W. Jacobs
Principal Specialist: Rodenticides
Insecticide-Rodenticide Branch
March 5, 1989

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