5-20-91

IRB BRANCH REVIEW - TSS

Record Number(s)

D164074

IN 5/2/91 CUT 5/20/91

EFFICACY

FILE OR REG. NO. 46779-1

PETITION OR EXP. PERMIT NO.

DATE DIV. RECEIVED 3/15/91

DATE OF SUBMISSION 2/28/91

DATE SUBMISSION ACCEPTED 5/2/91

TYPE PRODUCTS(S): I, D, H, F, N, R[X], S

DATA ACCESSION NO(S). none

PRODUCT MGR. NO. 14

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

COMPANY NAME Rancher's Supply, Inc.

SUBMISSION PURPOSE 1990 Annual Monitoring Report

CHEMICAL & FORMULATION 1.00% Sodium Fluoroacetate (Compound 1080) in Livestock Proteccion Collar

1/7

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 1.00% Sodium Fluoroacetate (Compound 1080) solution enclosed in a two-pouched rubber vessel attached to Velcro bands which hold the pouches 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, 11/15/88, 3/5/89, 4/29/89, 6/13/89, 12/19/89, 5/9/90, 10/22/90, and 3/1/91 along with other information in the three-volume product jacket.

The product was conditionally registered on 12/1/87. Rancher's Supply is the source for all Livestock Protection Collars legally produced in this country.

This review discusses the the Texas Department of Agriculture's (TDA's) submissions of its "1990 Annual Report Livestock Protection Collar Use." TDA is rquired to report to EPA annually on the use of the Rancher's Supply collar in Texas. As noted in prior efficacy reviews, TDA was asked to discuss in its monitoring report for 1990 the structure and functioning of Livestock Protection Collar "pools." In its cover letter to this submission, dated 2/28/91, TDA has repeated its request to be relieved of future requirements to file monitoring reports.

201.0 DATA SUMMARY

TDA reports that 197 persons either were licensed or relicensed in 1990 to use Livestock Protection Collars in the Lone Star State. A total of 1183 collars were purchased in Texas in 1990. Individual's purchased 220 collars; pools bought 663; and the Texas Animal Damage Control Service bought 300 collars.

Of the licensed applicators in Texas, 39 reported use of collars in 1990, while 29 reportedly stored collars but did not use them. Eight of the applicators using collars in Texas in 1990 were ADC personnel.

General data on collar use in Texas in 1990 are summarized in Table 1, which is constructed to permit comparisons between results reported for ADC use and for use by ranchers. There were considerable discrepancies between TDA's written narrative and its break-out table (1) on fates of collars within counties for use by individual ranchers. I elected to go with the results in the break-out table. I also used the break-out table's (4) data for ADC use results. As collars lost due to unknown causes were not mentioned for ADC use, the relevant entry in Table 1 is designated "NR" ("none reported") rather than "0". For this reason, the total in this category for the year is followed by a question mark.

Table 1. Summary of Livestock Protection Collar use in Texas in 1990.

	USAGE BY POOLS AND INDIVIDUALS	TEXAS ADC USAGE	1990 TOTALS
Applicators Using Collars	31	8	39
Counties Where Collars Used	13	12	19
Days of LPC Use			
Maximum	22,163	14,470	36,633
Minimum	22,597	14,702	37,299
Average	22,382.5	14,586	36,966
Collars Punctured by Coyotes	23	10	33
Collars Damaged by Vegetation	23	7	30
Collar Damaged by Other Causes	21	NR	21?
Collars Damaged by Unknown Causes	0	8	8
Collars Lost	34	11	45
Coyotes Believed to Have Been Taken by Collars	24	7-10	31-34
Suspected Collar Kills Found	6	NR	6?
Nontarget Deaths Reported	0	0	0
Violations Reported	0	0	0

Udjusting for differences in numbers of collars apparently used, ADC's and ranchers' results for collar use are rather similar, with the exception of the category "Collars Damaged by Unknown Causes." TDA's narrative on ranchers' use mentions an incident that would fit in this category but the break-out table (1) does not link any collar number with such an incident.

Table 2 compares results reported for 1990 with those reported for 1988 and 1989. These data show no clear trends. Collar use in 1989 was lower than that in 1988, but use increased sharply in 1990. This increase appears to have been due to the advent of collar pools and to the beginnings of use of collars by Texas ADC personnel. The increased use of collars in 1990 was not accompanied by a drammatic increase in the number of coyotes suspected as having been killed by Livestock Protection Collars, although it is possible that TDA applied more stringent criteria in assigning cases to this class for 1990 than for earlier years.

Table 2. Summary of Livestock Protection Collar use in Texas in 1988-1990.

	1988 TOTALS	1989 TOTALS	1990 TOTALS
Collars Bought	827	441	1183
Applicators Using Collars	34	30	39
Counties Where Collars Used	22	20	19
Days of LPC Use			
Minimum	24,944	25,543	36,633
Maximum	26,445	28,428	37,299
Average	25,694.5	26,985.5	36,966
Total Collars Used	524	463	$\leq$ 951¶
Collars Apparently Undamaged*	435	380	820
Collars Punctured by Coyotes	30	23	33
Collars Damaged by Vegetation	15	28	30
Collars Damaged by Other Causes	1	0	21?§
Collars Damaged by Unknown Causes	4	7	8
Collars Lost	39	25	45
Coyotes Believed to Have Been Taken by Collars	37	23	31-34
Suspected Collar Kills Found	7	1	6?
Nontarget Deaths Reported	1†	0	0
Prey Kills w/no Collar Puncture	1	26	NR
Serious Infractons Reported	1	1	0

¶ The number of collars used by ADC personnel was not reported. This figure represents tha maximum possible number of collars used.

* This number determined by subtracting numbers in "damaged" and "lost" categories from total number of collars used.

§ Twelve of these collars maye have been the onese that were reportedly disposed of for being "in poor condition."

† This animal was a lamb whose collar had been ruptured by unknown causes.

I suspect that there will be expanded development of collar pools and increased ADC use of collars in 1991. Consequently, I believe that we should continue the requirement to monitor collar use for one more year at least. When this collar was registered, the monitoring program was prescribed to continue for the first four years of use; 1991 will be the fourth year of collar use in Texas. Whether the monitoring program can be dropped after 1991 is uncertain. With questions having been raised regarding the original carcass residue data, upon which were based presumptions of minimal hazards to scavenging eagles, the monitoring studies have taken on greater importance as means for providing the Agency assurance that collars are being used in accordance with the labeling's Use Restrictions and that Endangered Species are not being harmed.

TDA's report "LIVESTOCK PROTECTION COLLAR POOLING" describes the purpose of collar pools of several ranchers as a means of making "an adequate number of collars available on an as needed basis." Pools are managed by agents of Rancher's Supply. TDA must approve these agents. Agents must take TDA's "Predator Management Training Course for LPC Applicators," pass the course's examination, and obtain an appropriate certified applicator's license. Agents also must obtain a pesticide dealer's license. TDA waives test and licensing fees for "Texas Agricultural Extension Service County Agents who serve as agents for collar pools." TDA's current regulations provide for as many as 15 collar agents. The report lists names and addresses of six collar pool agents, five of whom appear also to be County Extension Agents.

Collar users belonging to pools submit quarterly use reports only for the quarters in which collars are on the users premises. If users have no collars in their possession for an entire quarter, they submit no report. It is not clear from TDA's accounts whether the pool agent submits such reports. Pool agents are required to submit to TDA reports of transfer of collars, whenever they occur(?), and to maintain records on all such transfers.

As of the end of 1990, the six Texas collar pools had acquired 913 collars. Five of these were punctured by coyotes; 12 were lost; and one was torn. Nine or ten members of four pools used these collars. These results probably include data from 1989 as well as 1990.

The last section of TDA's monitoring report is entitled "RESULTS OF LIVESTOCK PROTECTION COLLAR USE BY RANCHERS IN TEXAS April 1988 - December 1990." The most interesting aspects of this brief report deal with cross year summaries of targetting strategies and duration of exposure needed to obtain collar punctures. TDA reports that there were 85 incidents in which collars were known to have been punctured in Texas as a result of applications made by ranchers.[1] Nearly one-fourth (21) of these incidents occurred within the first week of exposure; 66 (78%) occurred within three weeks. In some cases of

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1 This number does not "track" exactly with the suspected numbers of coyotes killed. Reasons for this discrepancy may include problems caused by reported instances in which coyotes found dead were presumed from other evidence to have taken "missing" sheep and punctured collars were not found and instances in which more than one coyote was taken with a single collar.

semi-prophylactic use, punctures followed only after many weeks of exposure. The longest duration of continuous exposure that eventually led to a punctured collar was 104 days. Only about 40% (56 of 139) of rancher's collar applications produced detected collar punctures.

Over half of all punctures occurred in target flocks or herds in which no more than ten collared animals were used. This strategy seems to work best if a target group includes mostly adult animals plus a few collared kids or lambs. As the use directions portion of the technical bulletin now states that this type of strategy has not been tried and, consequently is not recommended for use with sheep, it is possible that the registrant may wish to amend that portion of the bulletin.

Despite the relatively small numbers of coyotes known to have been taken, TDA considers the collar program in Texas to have been successful. Reasons for this include the collar's ability to take "problem" coyotes (certain livestock killers) that may have evaded other control methods and that the number of "suspected" coyote kills probably understates the number of actual kills. Because predation is the greatest known cause of death of collared animals, TDA reasons that most of the missing animals probably were predator kills and that many such kills would have involved collar punctures. TDA states that collar kills of coyotes have been reported in all months except January, adding

> "This ability to kill problem coyotes during all seasons of the year accounts for the relatively high effectiveness rating of collars by applicators, as opposed to other methods responsible for killing much larger numbers of coyotes."

202.0 CONCLUSIONS

1. In reviewing your "1990 ANNUAL REPORT LIVESTOCK PROTECTION COLLAR USE," we encountered discrepancies between the numbers of collars punctured by coyotes, vegetation, etc. reported in the text and the numbers obtained through analysis of the relevant "break-out" table (your Table 1). Please check these discrepancies and tell use which numbers are correct.

2. Your report on collar pools was informative and interesting. We were not sure from the accounts whether pool agents must file quarterly reports or whether they must only report collar transactions as they occur.

   Collar pools would seem to make collar use more economical for pool members. As long as use and handling of pool collars is consistent with the "Use Restrictions" and all other stipulations in labeling, the Registration Division has no objection to continuation of this practice.

3. In your report summarizing three years of rancher's use of Livestock Protection Collars in Texas, you note that some ranchers successfully used collars to take coyotes when a few collared lambs and their mothers were combined with dry ewes to form a target flock. If you have confidence in this strategy, you may wish to ask Rancher's Supply to amend section

"I.E.2.c." of the technical bulletin. Currently, that portion of the bulletin does not recommend the strategy "Collar vulnerable individuals in large flocks" for sheep.

4. We do not feel that it would be appropriate to drop the monitoring report requirement at this time. Our original plan was to consider dropping this requirement after four years of data had been received. Your reports appear to have been thorough and forthright. Consequently, your reports have made a reasonable case for dropping the requirement after the 1991 report has been received. You should note, however, that other factors may come into play.

   One such factor is the need to have a plan as part of the registration to mitigate hazards to Endangered Species and other nontarget species, notably scavengers. The monitoring program may be the best tool available to discourage violations of the Use Restrictions associated with this product and to bring to justice those who commit such violations. In the coming months, the Agency must decide whether the current labeling would be sufficient, without a monitoring program, to ensure adequate compliance.

William W. Jacobs
Principal Specialist: Rodenticides
Insecticide-Rodenticide Branch
May 20, 1991

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