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APHIS Animal Damage Control Livestock Guarding Dog Program'

Jeffery S. Green

Abstract.--One hundred traditional breed livestock guarding dog pups were placed with sheep producers in Wyoming, Idaho, Oregon, and Washington during 1987-88 as part of the APHIS Animal Damage Control program. Producers reared the dogs and integrated them into their operations. Ninety-three dogs were rated as follows: 68% good, 17% fair, and 15$ poor. Success was breed-related. Sixty-one percent of the dogs were used on **pasture operations and** 39% on range operations. Nineteen percent of the dogs died prior to reaching 18 months-of-age.

INTRODUCTION

Included in the transfer of the Animal Damage Control (ADC) program from the U.S. Department of the Interior, Fish and Wildlife service to the U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service in December 1985, was the responsibility for funding and oversight of a guarding dog pilot program in Oregon and Minnesota. Briefly, the objective of the Oregon program was to promote the use of livestock guarding dogs as a method of reducing coyote depredation on sheep. The focus in Minnesota was wolf depredation.

A Congressional Directive in fiscal year 1987 (FY-87) expanded the pilot program in the west to include Washington, Idaho, and Wyoming. An unspecified amount of funds were to be used to purchase guard dogs for placement with livestock producers.

To fulfill the directive, ADC established cooperative agreements with Oregon State University Extension Service (OSES) and USDA's Agricultural Research Service (ARS) to use their guarding dog specialists to conduct the programs in the 4 western states.

In FY-88 Congress renewed their directive to ADC to administer the dog program and continue the purchase and placement of dogs. To more adequately fulfill the directive, ADC discontinued the cooperative agreements with OSES and ARS and employed a guarding dog specialist in February 1988 to conduct the western program. The program in Minnesota was conducted by other ADC Specialists.

For FY-89, the directive was reissued to ADC with several modifications. Montana was to be included in the western program, and Federal funds were not to be used in the direct purchase of dogs. Efforts were to focus on information dissemination and education. ADC employed a second dog specialist in November 1988 to assist conducting the western program.

This paper focuses on the dogs that were purchased with Federal funds and placed with livestock producers in Wyoming, Idaho, Oregon, and Washington during 1987 and 1988.

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METHODS

Dogs were purchased from commercial breeders who could supply registered pups of recognized livestock guarding breeds with parental stock free from hip dysplasia. In general, pups could be no older than 8 weeks-of-age if not reared with sheep or goats or 12 weeks-of-age if they were reared with sheep or goats.

Most pups were brought to the U.S. Sheep Experiment Station near Dubois, Idaho for early socialization to sheep until they were placed with producers. Some pups were delivered directly from the dog breeder to the sheep producer.

Sheep producers were selected for participation in the program based on several criteria: the magnitude of their predator problem or potential for predation, whether they were a commercial producer with a minimum of 25 ewes and/or nannies in either pasture or rangeland operations, and their enthusiasm and willingness to participate in the program. Priority was given to producers with no guarding dogs and with an ongoing predator problem. Finally, dogs were distributed between the 4 states in consideration of the number of sheep producers and the extent to which guarding dogs were already being used in the state. The objective was to promote the use of dogs in areas and types of situations where they had not been tried previously.

Producers selected for the program were provided literature on the concepts of raising and training a guarding dog. They were counseled by a guarding dog specialist either personnally or by telephone on how to rear the pup and integrate it into their operation. Some producers viewed a slide series on the use of guarding dogs, and some operations were visited by the specialists when the pup was delivered. All producers were encouraged to contact the dog specialist if they had questions or problems working with the dog.

Dogs were rated using the following criteria: 1) the frequency of occurrence of significant problems (e.g. dog wandering excessively; dog harassing, injuring, or killing livestock; dog posing a serious threat to people; dog seriously disrupting sheep management), 2) evidence of the dog displaying guarding behaviors (e.g. barking at disturbances, moving around the sheep, remaining near the sheep), 3) the dog's apparent effect on the incidence of predation, and 4) the producer's satisfaction with the dog.

Data on the dog's performance was gathered from producers through personal visits, telephone conversations, and a written questionnaire. I assigned one of the following ratings to each dog: good - dog generally remained near sheep, incidents of predation markedly reduced or kept to a minimum, minor problems, producer pleased with results; fair - dog had potential, predation somewhat reduced or unchanged, benefits outweighed problems; or poor - dog had no influence on predation and major problems outweighing benefits. Chi-square procedures were used to analyze the data.

RESULTS AND DISCUSSION

One hundred livestock guarding dogs were purchased from summer 1987 through summer 1988. Most of the dogs were Great Pyrenees and Anatolian Shepherds (Table 1). With 1 exception, the dogs were pups, and the majority were between 7 and 8 weeks-of-age. Mean purchase price (± Standard Error) including shipping (applicable for 63 dogs) was $443 ± 7, range $250-550. Mean prices for individual breeds and other data are in Table 1.

Eighty-two sheep producers received guarding dog pups. Forty-five pups were placed in FY-87, 55 in FY-88. The number of dogs and producers, respectively, for each state are as follows: Idaho, 36 and 26; Wyoming, 35 and 29; Oregon, 16 and 14; and Washington, 13 and 13. Most producers (n = 67) received 1 dog each. Thirteen range producers received 2 pups, and 1 received 4. Three producers received a second dog following the early accidental death of their first pup.

Ninety dogs remained with the producer they were initially placed with. The remaining dogs (n = 10) were moved to other operations primarily due to the dogs' poor performance. Two producers left the sheep business necessitating moving the dog. The number of dogs in the program is not static due to deaths, and the number of producers varies for the reasons mentioned previously. The remainder of this report will primarily discuss the results of the program as they existed as of 1 January 1989. If the discussion varies from this qualification, it will be noted.

Ninety-three dogs survived long enough to be rated on their performance. Sixty-eight percent were rated good, 17$ fair, and 15% poor (Table 2). Great Pyrenees were rated higher than Anatolian Shepherds (g < 0.01). Sample size was insufficient to allow meaningful

statistical comparisons with the other 2 breeds.

A recent survey of almost 400 livestock producers who used dogs (n = 763) revealed no breed differences (Green and Woodruff 1988). One possible reason for the different;al rating for Anatolians in the survey and this study may be age of the dogs. Dogs in the survey were generally older than those in this study, and it is likely that some of the Anatolian Shepherds in this program will ultimately become good guardians. However, particularly as young dogs, Anatolian Shepherds are clearly more problematic than Great Pyrenees.

Ratings did not differ between the 36 dogs used on rangeland and the 57 used on pastures nor between males and females (g > 0.05). With few exceptions, all of the dogs were neutered, females at approximately 6 months-of-age and males at approximately 9 months-of-age.

Forty percent of the dogs injured livestock, and 15% killed livestock (Table 3). More Anatolian Shepherds were involved in both activities than Great Pyrenees (g < 0.01). Most of these incidents occurred as the dogs were pups and did not persist as the dogs matured. Two dogs (1 Kuvasz, 1 Great Pyrenees) were culled because they were judged incorrigible in this behavior. One Anatolian was culled also, due in part to this behavior. One young Akbash Dog was with sheep in a corral that was visited by an intruding dog during the night. The sheep piled up, and 70 ewes died. Details of the incident are unknown.

Nineteen of the 100 dogs are no longer in the program (data as of March 1989). Three were culled, and 16 died or disappeared. (Hereafter, all 19 will be termed deaths). Vehicle mishaps and accidents were responsible for the

Table l.--Purchase data for dogs in the ADC dog program.

Breed	n	Number of breeders	Number of different breedings	Mean price (S)
Great Pyrenees	65	19	21	418
Anatolian Shepherd	27	6	8	504
Akbash Dog	5	2	2	478
Kuvasz	3	1	1	400
Total	100	28	32	443

Table 2. Ratings of performance of ADC livestock guarding dogs. (Percentages in parentheses)

Breed	Good	Fair	Poor
Great Pyrenees	49 (83)	7 (8)	3 (9)
Anatolian Shepherd	10 (38)	7 (27)	9 (35)
Akbash Dog	4 (80)	1 (20)	0
Kuvasz	0	1 (33)	2 (67)
Total	63 (681	16(17)	14 (151

Table 3. Dogs that injured or killed sheep. (Percentages in parentheses)

Breed	Injured sheen	Killed sheep
Great Pyrenees	14 (24)	4 (7)
Anatolian Shepherd	19 (73)	8 (31)
Akbash Dog	1 (20)	1 (20)
Kuvasz	3 (100)	1 (33)
Total	37 (40) ,	14 (151

majority of deaths (7), followed by disappearance (4), unknown illness and culling (3 each), and poisoning (2). Nine died between 4 and 9 months-of-age, and 10 died between 10 and 18 months-ofage.

Lorenz et al. (1986) reported a higher mortality for dogs on rangeland than pastures. No difference between range and pasture deaths was noted for dogs in this study (17% of range dogs, 23$ of pasture dogs, p > 0.05), however, the dogs are yet comparatively young.

Of the 81 dogs currently alive, 25 (31%) are < 12 months old, 55 (68$) are between 1 and 2 years old, and 1 (1%) is > 2 years old.

At least 25 producers reported a decrease in predation which they attributed to the presence of their guarding dog. Some termed the decrease "significant" or "remarkable," and others said the dog has "helped." Data from several of these producers for annual totals of sheep lost to predators before using a dog and while using a dog, respectively, are as follows: 70 and 19, 15 and 0, 300 and 30, 490 and 66, 30 and 0, 40 and 0, 70 and 4, 25 and 0, 65 and 5, 700 and 500, 175 and 115.

There are several caveats to be considered with this type of data. Some producers are unable to keep accurate data on predation loss or may not be

inclined to do so in light of other more pressing duties involved with livestock production. Producers continued to use other methods of reducing predation including good livestock management and traditional removal techniques provided by ADC Specialists (trappers) or other professional trappers. The level of depredation is not static between years. It is therefore difficult to definitively attribute a specific level of reduced predation to one control activity. Perhaps the most important evaluative criterion is the producer's general assessment of the value of a control tool.

Several producers noted a reduction in predation and attributed it to the dog, but behavior problems with the dog precluded using the dog further. At least 10 producers are hopeful that the dog will be effective but have not yet seen a reduction in predation.

Several dogs were caught in coyote traps, but none have died as a result of legal predator control activities. At least 2 dogs were poisoned, but the source of the poisoning was not reported. One dog was observed to kill a coyote.

On some operations, while performing their control activities, ADC Specialists made observations on the dogs' performance. In general, these observations confirmed the reports provided by the producers. At least in some instances, there were too many coyotes for a young guarding dog to keep predation minimized. A combination of trapping and other effective removal techniques along with a dog appeared to be essential in keeping losses to predators low. This further illustrates what knowledgeable people have continually advocated, that to achieve success in reducing predation, a variety of control techniques is necessary.

Because the dogs are relatively young, another year's data on predation losses will be important to adequately evaluate the dogs' effectiveness.

Despite various problems with some of the dogs, most producers are pleased with the results to date and in many instances attribute at least some of the reduction in predation to the dog. No fewer than i.dozen producers have or intend to purchase additional guarding dogs to use in their operations. One range producer in Wyoming commented that if his guarding dog ever learned to write checks and pull camps, he'd have his (the producer's) job.

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