

Raising and Training a Livestock-guarding Dog

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Guarding dogs are useful tools for reducing livestock losses to predators. Success depends on the inborn abilities of the dog and on proper training. This publication provides suggestions for bringing out the best performance in your livestock-guarding dog.

We'll review the basics of guarding dog behavior and methods for starting a pup with sheep. We'll discuss problems that you might encounter during the training process, as well as possible solutions.

Basic behavior patterns are the same for any of the Old World breeds, such as Anatolian Shepherd, Castro Laboreiro, Great Pyrenees, Komondor, Kuvasz, Maremma, Polish Tatra, Shar Planinetz, and Tibetan Mastiff. Our suggestions will work for any of these breeds. Furthermore, over the past 200 years, the Navajos have used the same methods to train dogs for guardian duty in New Mexico and Arizona.

Training a guarding dog uses techniques that are much different from those used in training a dog for obedience, hunting, or herding.

Training a livestock-guarding dog is primarily a matter of *raising the dog with sheep* to establish a social bond between sheep and dog (Figure 1). It's a process that depends on supervision to prevent bad habits from developing and on establishing limits of acceptable



Figure 1.—*These 8-week Maremma pups are being raised in the lambing barn. The vertical boards nailed to the feed trough give pups a place to escape from a ewe that may butt. Sniffing nose-to-nose is the start of social bonding. Note the similarity of the interaction between this lamb and pup to the ram and adult dog in Figure 2b.*

behavior that are compatible with your operation.

Successful training produces an adult that's trustworthy with sheep, attentive to sheep, and protective of sheep. These factors build on one another: protective behavior is mainly the result of trustworthy and attentive behavior.

Training may include specific goals that blend with your operation. Perhaps your dog must not jump fences, must adjust to rotational grazing, or must avoid antipredator

devices. Deciding where you want the dog to work and which sheep you want the dog to protect are other factors in developing a successful training program.

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Basic guarding dog behavior

Livestock-guarding dogs have traits that distinguish them from other breeds. They tend to retain puppylike characteristics throughout their adult lives—licking the muzzle of an adult, food begging, play wrestling, following parents or littermates, staying near a home or den site, barking when something new or strange approaches, and absence of predatory behavior.

The frequency of display of these behaviors varies among dogs, but it can be encouraged and reinforced in a dog through learning and positive experience. Your dog will direct many of these behaviors toward the sheep as if they were littermates or parents.

Livestock-guarding dogs also tend to follow a routine. Establishing an acceptable routine for a growing pup will help to set the pattern of adult behavior. A well-established pattern or routine often is difficult to change.

For example, a pup that never learns to jump a fence may never become a fence-jumper as an adult. However, if fence jumping becomes an established routine, it's difficult to correct.

Trustworthy

The absence of predatory behavior is the basis of trustworthiness. Livestock-guarding dogs are selected to display investigatory and submissive behaviors that do not threaten sheep or other livestock.

Approaching sheep with ears back and squinted eyes, avoiding direct eye contact, and lying on the back are called *submissive behaviors* (Figure 2). Sniffing around the head or anal areas is called *investigatory behavior*. Both are desirable behaviors, signs that your dog has the right instincts and is working properly.



Figure 2a.—These three different submissive poses of an adult Maremma allow sheep to investigate, and each one fosters dog–sheep bonding. Here, eyes are squinted and ears are back; forepaw and rear leg are raised. The dog is prepared to roll over on its back as in Figure 4a.



Figure 2b.—Eyes are squinted, and ears are back in this nose-to-nose sniffing.



Figure 2c.—Again with squinted eyes and ears back, the dog avoids direct eye contact with sheep.



Figure 3.—*This is a display of approach-withdrawal behavior. There's real uncertainty here: The dog's hackles and tail are raised in a posture of dominance or aggression, but his ears are back and he avoids eye contact with the intruder—postures of submission. The dog circles between sheep and intruder. Will this display become aggressive? The chance that it might is enough to ward off most predators. Note how calmly the sheep are feeding in the background.*

Attentive

The attraction of a guarding dog to a homesite and to surrogate littermates is the basis of attentiveness. Flock guardians are selected for their ability to follow other animals. Following a moving flock and sleeping and loafing among the sheep are signs of attentiveness to sheep.

A dog that retreats to the flock at the approach of a stranger is showing another good sign of a sheep-attentive dog. Researchers have shown a direct correlation between attentiveness to livestock and a reduction in predation. Therefore, success depends on training your pup to follow sheep.

Protective

The basis of protectiveness is your dog's ability to react to deviations from the routine. Consequently, flock guardians are selected for their ability to bark at new or strange activities.

Typically, a young pup will respond to a new or strange situation by rushing out and barking with tail raised over its back or it will retreat

to the sheep or homesite, if challenged, with tail between its legs. This is called approach-withdrawal behavior (Figure 3).

A predator—let's say a coyote—usually avoids the threatening approach-withdrawal behavior of a guarding dog. Attacking a predator generally is unnecessary, and it rarely occurs.

Interactions with potential predators often involve complex behaviors that are difficult to interpret. Approach-withdrawal behavior may quickly shift to an aggressive display of dominance or a hasty retreat to the sheep. It might be coupled with defense of food or maternal-like defense of a young lamb.

The distance of the approach toward strange activity increases as the dog matures. The distance a dog travels varies with individuals but rarely extends beyond the boundaries of the property. Because protective behavior develops as a result of good trustworthy and attentive behaviors, it doesn't require specific training.

Raising your pup

Social bonds

During the first year, training should emphasize socializing your dog with sheep to form social bonds. Social contacts made shortly after weaning are believed to be important for correct social contacts as adults.

Young pups confined with sheep are more likely as adults to prefer sheep to people or other dogs. Similarly, lambs that are raised with a dog will show an attachment as adults to the dog with which they were raised. An important point is that the sheep-dog bond involves training both sheep and dog.

Many producers find lambing season to be convenient for starting a pup. Pups can be started inside a barn or shed. Allow the pup to mingle with lambs in grouping pens.

Timing the arrival of a pup with lambing can be difficult. Therefore, any of the strategies below can be used to start a pup any time of the year.

Rearing your pup with sheep

From the start, it's *very* important to keep your dog with sheep and to avoid contact with your house, with people, and with other dogs—including littermates.

Pen your newly weaned pup with six or more sheep for 8 to 16 weeks (until it's 5 months old) near water, bedding ground, or other points where the sheep gather (Figure 4). Possible pen locations are a lambing barn, lamb creep, night corral, or pasture.

One Texas rancher started a new pup in a welded-wire pen under a shade tree in a pasture. He kept six sheep in the pen at all times, rotating sheep several times a week to give all flock members an opportunity to meet the dog.

He kept food, water, and shelter for the dog and sheep in the pen. He placed a salt lick outside the pen to draw other flock members near the

dog. He let the pup out to exercise several times a week.

Hampshire College used a variation of the Texas rancher's system. Pups were placed individually in pens containing a calf hutch with a lamb or a ewe. Heavy-wire cattle panels formed the sides of the pen. Wire panels were mounted on insulators and connected to electric fencing.

Another variation used by ranchers in Oregon is training pens made out of fencing wire. Training pens can be made using a combination of woven, barbed, smooth, or poly wire. Any metal fencing material can be mounted on insulators and connected to an electric charger.

Even if your pastures are not surrounded by electric fences, teaching your pup that fences are "hot" decreases the likelihood of its squeezing through or jumping over (wandering).

At 5 months—when the adult teeth erupt—open the gate of the training pen. Your pup should follow the sheep out to the main flock. Continue to pen several sheep and the pup at night for another month or two. A young dog also can be penned if you're away for prolonged periods.

Leave the gate to the training pen open when the pup is out with the sheep. This will give the pup access to its homesite. In addition, you can use the pen as a feeding station.

For an older dog, a doghouse makes a good homesite and feeding station. It can double as a salt lick for the sheep if you add a tray on the back of the house. The doghouse then becomes a socializing point for both dog and sheep. You easily can move this homesite from one pasture to the next if you build it on skids, go-cart wheels, or a trailer frame.

These examples work well for ranchers who want to keep their dog in distant pastures, away from the house, and away from constant shepherding. Remember the concept: If you want your dog to



Figure 4a.—At 16 weeks of age, this Anatolian pup is in a well-fenced dry lot with ewes. The pup's submissive posture allows sheep to investigate.



Figure 4b.—The pup's sitting posture is another aspect of submissive behavior, this time with a touch of curiosity—what are those sheep eating?

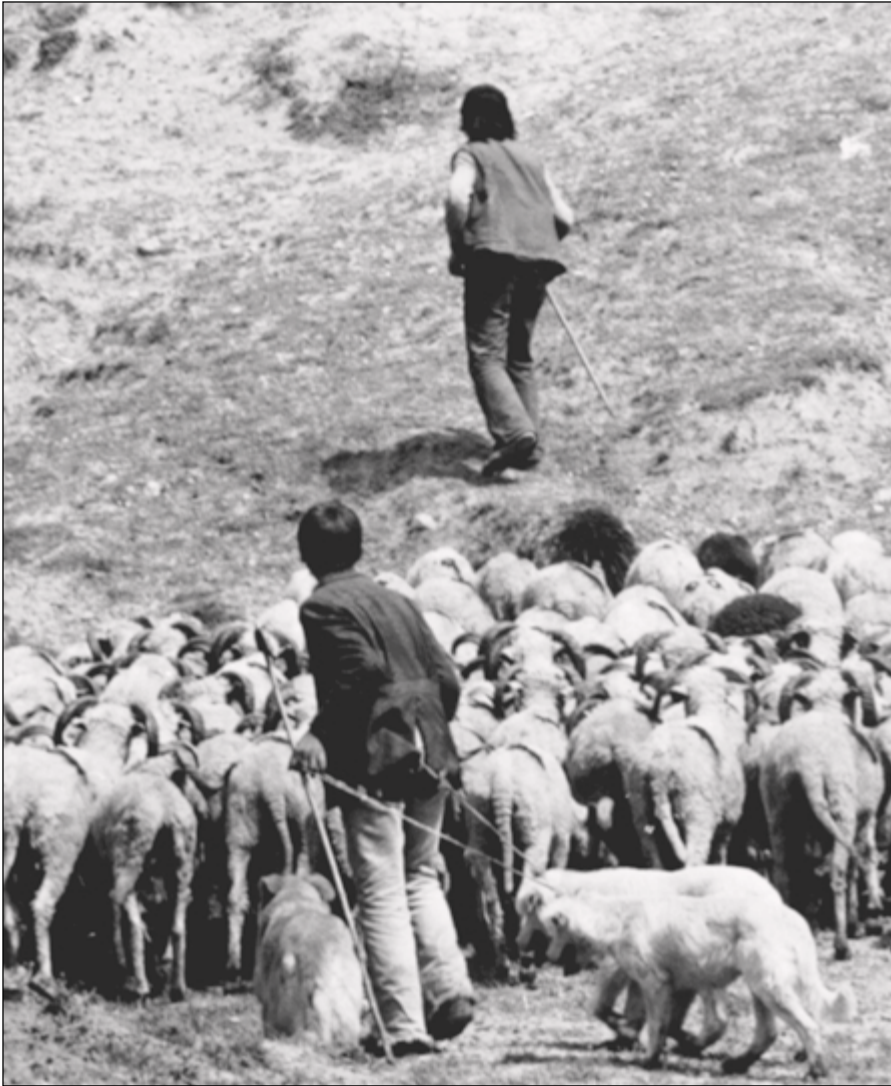


Figure 5.—At 6 months of age, these Shar Planinetz are being taught to follow the flock in a range operation in the former Yugoslavia.

become attentive to sheep, you must raise it with them.

Use your own judgment about when to leave your dog unpened without supervision. Normally, you can do so when the dog is between 6 and 8 months of age. A good sign that you can leave your dog alone is that it stays with the sheep rather than following you as you leave the pasture.

It may be a mistake to leave a 4- or 5-month-old pup alone in a distant pasture, even if the pup is trustworthy and attentive (Figure 5). Such a young pup doesn't have the size and strength to defend itself from

marauding predators, and a bad experience at that age may prevent its development into a good guarding dog.

Spooky sheep

Confinement of a pup with sheep in a small area promotes the pup's interaction with spooky sheep. You might corral the pup with the flock at night or follow the example of the Texas rancher.

An alternative is to raise the sheep with replacement lambs that you plan to incorporate into the main flock. Once the dog has made a bond with one group of sheep, other sheep tend to follow.

It's not a good idea to raise the pup with a flock of market lambs—and then expect your dog to be attentive to older spooky ewes when you sell the lambs. In one early trial, a pup was trustworthy and attentive toward the market lambs with which it was raised. When the pup was 6 months old, the rancher sold the market lambs and placed the dog with the ewe flock. The ewes fled, which in turn triggered a play chase from the dog.

Herding dogs

Keep the duties of your herding or pet dogs separate from those of your guarding dogs. A guarding dog that plays with other dogs reinforces the dog–dog bond rather than the dog–sheep bond.

However, *introduce* your herding dog to your guarding dog so the guardian doesn't act aggressively toward the herder. Sometimes, a guarding dog will act aggressively toward *your neighbor's* herding dog, even though it's friendly toward *your* herding dog.

Aggression of a guarding dog toward either herding dogs or intruding dogs likely will depend on differences in age, sex, familiarity, and individual temperament. Antagonistic displays tend to occur most often as a result of competition between dogs of the same sex and age.

Patting

Pat your dog only with deliberate planning because patting reinforces the dog–human bond. The more you pat the dog, the more it will seek human attention. *Some* dog–human bonding is needed because family members and hired help need to interact occasionally with the dog—when, for example, you need to take health exams or rotate pastures.

It's appropriate to pat the dog at feeding time or during checks of sheep, but do it in the middle of the pasture or within the pen. Patting your dog through the fence, over a

gate, or at the house reinforces frequent visits to these locations.

Don't pat your dog or feed it at a steady location unless you want it to be there. Obedience training isn't appropriate—it tends to increase social bonding to people.

Summary

Each dog, handler, and ranch share a unique set of conditions. Needs and expectations in predator control are different for a small, part-time producer close to town, a midsize commercial producer, and a large range operator.

For example, the small-flock owner may be close to town or close to neighbors. Neighbors and frequent visitors can be a distraction for the dog. On the small farmstead, extra patting can reinforce the bond to your property and familiarize the dog to people.

A dog that displays attentiveness to people but moves freely about the farm can provide a degree of protection even if it's not with the sheep all the time.

On the other hand, a commercial producer with several hundred sheep may require a dog that is shy of people. A dog that prefers sheep to people will work better in unsupervised settings. Shyness to people can be fostered by minimizing human attention, beginning at 5 weeks of age.

Range operators face other problems. Training pens are impractical at a range camp that's moved frequently. Range operators would do better to raise the pup with replacement ewe lambs or dry ewes at the home ranch the first year. An alternative is to purchase an 8-month or older dog that was started at another ranch. An older dog could be taken directly to the range camp.

Problems—and some solutions

The first step in diagnosing a behavioral problem is to relate it to one of the three basic behavioral

attributes: trustworthiness, attentiveness, or protectiveness. Experience shows that most problems relate to one of these three categories, so we present them here in that order. Then, we discuss two special situations, rotational grazing and antipredator devices.

Not trustworthy

Occasionally, a dog will injure or kill a sheep. Most behaviors resulting in injuries to livestock are correctable. They usually have one of these causes: play, injury to a sick or odd sheep, injury to a newborn lamb, or stalking.

Play. Pups, especially from 5 to 10 months old, may start playing with sheep the same way they play with littermates. They usually outgrow disruptive play behavior by 12 to 18 months.

Typically, a young dog will run around a sheep in a circle and stop quickly—front paws extended, rear end raised with tail wagging, and head lowered as in a bow. Ears may be cocked up and forward. If the sheep runs, a play chase often follows.

Sometimes, the dog grabs wool or nibbles on the sheep's ears as it runs alongside. Experienced sheep generally don't run from the play approach of a young dog. Sheep also don't run if the dog is prevented from chasing.

Corrective behavior is mandatory when chasing occurs: the problem can become serious as the sheep develop fear, and the dog's success reinforces further chasing. You might throw a stick in the dog's direction to divert its attention or spank the dog and give it a firm "No!"

Your dog may tend to play with a specific group of sheep, such as lambs. In that case, place the pup with rams or older ewes until the undesirable behavior subsides. A different group of sheep can inhibit the play approaches of a young pup.

A dangle stick is a useful training tool for playful pups that are left unattended with the flock. This is a board, stick, or tire section (18 to

30 inches long) that dangles from a hook attached to the dog's collar. Snap the stick to the collar with a swivel hook.

The stick should hang 3 or 4 inches above the ground when the dog stands upright. The device allows the dog to eat, drink, and display submissive and investigatory behaviors. But when the dog tries to run, the stick gets tangled about the legs. This provides immediate discipline and prevents a playful chase.

You can use this device on a playful pup for 3 to 4 weeks. Remove it in stages. First, remove the stick but leave the dangle chain; then, remove the chain when all playful behavior stops.

Another contribution to play behavior may be excess energy caused by improper feeding. A pup that's fed excess calories can either store them as fat or burn them in play activity.

If a pup is playful and fat, reduce its energy intake (but not the quantity of food) by selecting a chow that's low in fat and carbohydrates. Tests indicate that overactive dogs placed on a diet of cooked oats for 2 weeks show reduced play. A diet of cooked oats is high in fiber and creates a feeling of fullness without providing excess energy.

Sick or odd sheep. On rare occasions, a pup or older dog may injure or kill a sick, weak, or odd sheep. Sheep with severe cases of foot rot or those weakened by internal parasites or other medical problems may be attacked by otherwise trustworthy dogs.

There are documented cases of dogs chewing on dead scrotal sacs or tails that remain following castration or docking with rubber bands. Sheep whose heads are caught in woven wire fences or feeders have been injured also.

Trustworthy dogs that display unusual behavior toward sick or odd sheep normally don't become generalized sheep-killers. Treat or

remove the sick or odd sheep—don't remove the dog from guardian duty.

Newborn lambs. Several guarding dogs made mistakes during their first exposure to lambing. Typically, the injurious behavior occurred to the firstborn lambs of the season.

Supervision is required during your dog's first exposure to lambs. Tie or pen the pup if necessary. Discipline prevents a young dog from making further mistakes.

(Those same dogs were trustworthy with newborn lambs in later years.) Eating afterbirths is normal, and it won't lead to injurious behavior to sheep.

Stalking. An uncorrectable problem is frequent stalking in a crouch with lowered head, like a Border Collie. This response to sheep is an inborn trait of herding dogs. Training can't prevent the display of such inborn characteristics. Stalking behavior is virtually nonexistent in the Old World guarding dogs. If it does occur, replace the dog.

Not attentive

The most common problem here is a dog returning to areas of human activity, around the house or the barn. Wandering off the property generally is associated with investigatory activity at a nearby house or ranch or with sexual behavior.

Very few dogs are attentive 100 percent of the time, and most of them sleep during the day. Summer heat may reduce attention toward sheep.

Human activity. If your dog's bond is greater to your house or barn than to the sheep, look for one or more of these causes:

- You've patted or played with the dog
- The dog is attracted to house dogs
- Sheep don't accept the dog

You can avoid these problems by strictly following the training routine described in "Rearing your pup," page 3.

Some curiosity toward areas of activity such as corrals or barnyards can be expected—alertness is the basis of protectiveness. A dog that isn't primarily responsive to the activity of sheep may be less effective.

However, dogs attentive to people *can* be effective in these situations: where a shepherd is constantly present, within an electric fence, or where pastures surround house and barn.

Wandering may be associated with an attraction to human activity or with sexual activity of both males and females. Neutering your dog between 6 and 12 months of age can prevent unwanted wandering associated with sexual activity in both sexes. Neutering doesn't seem to affect other qualities of guarding dogs.

Summer heat. Large dogs, especially if they haven't shed their winter coats, may have difficulty dissipating excess heat during summer months. Your dog may retreat beneath a barn or dig a hole in cool dirt—and show no interest in sheep.

Brushing out underfur and shearing long-coated dogs may help. Provide plenty of cool water. Seek veterinary assistance if the dog's temperature rises above 102°F.

Not protective

Consistency in your training for trustworthiness and attentiveness will contribute to protectiveness. Most protectiveness problems are associated with poor attentiveness. Your dog's protectiveness also depends on its aggressiveness and on factors such as density of predators and flocking behavior of sheep.

Aggression toward predators depends on age and sex, and it varies among individual dogs. Displays of dominance associated with aggression may not appear until your dog reaches 18 months.

Don't punish a young dog for not acting aggressively toward a pack of older strays. An attentive dog that's only moderately aggressive still can

be an effective guarding dog by alerting a shepherd with barks or by diverting the attention of the predator to itself, and thus away from the sheep.

Scattered sheep. A single dog may have difficulty protecting large numbers of widely scattered sheep, especially where predator densities are high. In this case, you might either keep sheep flocked to maximize the dog's effectiveness, or add a second or third dog for reinforcement. Adjusting the number of dogs in a sheep operation must be done on a case-by-case basis.

Other factors

Rotational grazing. Moves to new quarters may upset your dog's routine. You should anticipate this and incorporate your moves into the training. The transition is easier if you move a doghouse or pen (homesite and feeding station) with the dog.

Walking your dog around the perimeter of a new pasture is a good method for introducing new surroundings. Sometimes, you may have to tie your dog in a new pasture for 1 to 3 days before it adjusts to the new location.

Antipredator devices. Don't use ejector devices or poison baits in pastures when a guarding dog is present. If ejector devices must be used in the vicinity of your pasture, you'll need to teach your dog to avoid them.

One method is to bait the device with scent and fill the capsule with red pepper and hot sauce. Your dog will associate the scent with the unpalatable taste. Remember to retrain your dog each time you use a new scent.

Raising a second or replacement dog

Sheep producers find that raising a second or replacement dog is easier than raising their first dog. Sheep producer and sheep have more experience the second time around.

The sheep producer has the added convenience of using an older dog as a “teaching” dog. A pup that has an older dog to follow may be left unsupervised at an earlier age than a pup that’s raised alone with sheep.

Through 16 weeks of age, it’s a good idea to keep your replacement pup near the watchful eye of a shepherd. Pen the pup with sheep in a barn, corral, or pasture as we described in “Rearing your pup with sheep,” page 3.

By 16 weeks, you can let the pup follow the older dog and benefit from the older dog’s supervision. Producers find that replacement pups direct playful energy toward older dogs rather than sheep and that experienced sheep are less skittish around a new dog when a familiar one also is present.

You’ll want to consider starting a replacement when your first dog reaches 2 to 4 years of age, because it takes 1½ to 2 years for a guarding dog to mature.

Fatal accidents are high in young dogs 6 months to 2 years old and low in the middle years (2 to 6). If you have two dogs on your ranch, separated in age by 2 to 4 years, your odds are the best that you’ll always have a guardian with your flock.

More assistance

There’s no way to anticipate the full range of good and bad behaviors your dog may exhibit. Don’t hesitate to call on your county Extension agent if you have questions about

the behavior or management of your dog. If you need further assistance, call your state Animal Damage Control office listed under U.S. Department of Agriculture, Animal and Plant Health Inspection Service, or call the Western Regional Office at 303-969-6560.

For further reading

Black, H. and J. Green, “Navajo Use of Mixed-Breed Dogs for Management of Predators,” *Journal of Range Management*, 1985, 38(1): 11–15.

Coppinger, L. and R. Coppinger, “Livestock-guarding Dogs,” *Country Journal*, April 1980, pp. 68–77.

Coppinger, L. and R. Coppinger, “Livestock-guarding Dogs That Wear Sheep’s Clothing,” *Smithsonian*, April 1982, pp. 65–73.

Coppinger, R., L. Coppinger, G. Langeloh, L. Gettler, and J. Lorenz, “A Decade of Use of Livestock Guarding Dogs,” *Proceedings of the 13th Vertebrate Pest Conference*, Monterey, CA, 1988.

Coppinger, R., J. Lorenz, J. Glendinning, and P. Pinaridi, “Attentiveness of Guarding Dogs for Reducing Predation on Domestic Sheep,” *Journal of Range Management*, 1983, 36(3): 275–279.

Green, J. and R. Woodruff, “Breed Comparisons and Characteristics of Use of Livestock Guarding Dogs,” *Journal of Range Management*, 1988, 41(3): 249–251.

Green, J. and R. Woodruff, *Guarding Dogs Protect Sheep from Predators*, USDA Agricultural Information Bulletin 588, revised 1993.

Green, J., R. Woodruff, and T. Teuller, “Livestock Guarding Dogs for Predator Control: Costs, Benefits, and Practicality,” *Wildlife Society Bulletin*, 1984, 12(1): 44–50.

Lorenz, J., R. Coppinger, and M. Sutherland, “Causes and Economic Effects of Mortality in Livestock Guarding Dogs,” *Journal of Range Management*, 1986, 39(4): 293–295.

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