The Ohio State University / College of Food, Agriculture, and Environmental Sciences / Department of Animal Sciences

Use of Guard Llamas in an Integrated Predator Control System

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BACKGROUND

- Historically, the llama has been used as a pack animal, carrying almost 20% of their body weight for miles up steep mountains.[5] While they are still used for this purpose in South America, Northern Americans have found a new way to utilize these hardy animals.
- Using the llama as a guard animal has been proven to negatively impact predation on newborn lambs[1], which in turn results in a more successful operation.
- With proper care and handling, the llama should be regarded as a viable way to control predation within a flock.

Figure 1: Llama outside of Machu Pichu[6]

PREDATORS MOST EFFECTIVE AGAINST

- Llamas are known to be most effective in protecting against canine species such as coyotes, red fox, wolves, and domestic dogs.[4]
- This is thought to be the case because llamas already have an innate fear of canines, so their instinct is to chase the animal away and alert others of its presence. [4]
- Studies also show that llamas work better alone rather than having multiple llamas working together in a pasture.[1]

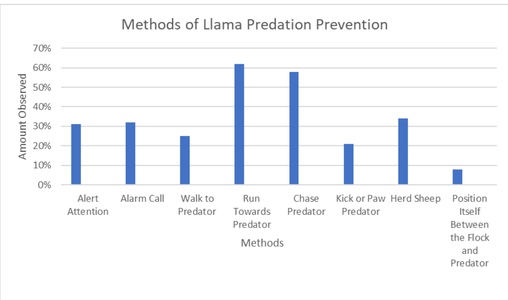

Figure 2: Methods Llamas Use to Prevent Predation[4]

HOW THEY PREVENT PREDATION

- Typical responses and protection tactics that the llamas use include alerting attention to the sheep and caretakers, making an alarm call, walking and/or running towards the predator, kicking and/or pawing the predator, herding the sheep to move them away from the predator, and positioning itself between the flock and the predator (refer to Figure 2).
- Llamas provide aggressive interactions with the canines when needed, but also provide passive protection, because some predators that rely on stealth may abandon the hunt if they see the llama in the pasture.[4]

Figure 3: Guard llama with its flock[7]

TRAINING

- Llamas reach their prime protecting age at 1-2 years old.[2]
- The working life of a llama is typically 10-15 years. [2]
- Very little training is required, and 80% of llamas have adjusted within one week after introduction. [1]
- To encourage bonding, llamas and sheep should be kept together in a small paddock for 4-6 weeks rather than on pasture. [2]
- The use of wethers, or castrated males, is recommended over intact males as intact males may try to mate with the ewes. [1]
- For one llama, the size of the sheep flocks can be as little as four sheep, and as many as 2,100; however the average flock size is 250-300 sheep. [1]
- Once bonded with the flock, they become the llama's family group, and their pasture the llama's territory. [1]

Figure 4: CDT vaccine[8]

LLAMA CARE

- 80% percent of farmers with llamas said that daily care for the llama was the same as their sheep, and they did not need to provide any special feeds. [1]
- A separate food container for the llama should be provided at a height the sheep cannot reach as to minimize the chance of any food- based aggression. [2]
- The average daily intake of a gelded llama is 7-10 lbs. of grass hay per day; granular supplement and fresh water should be given free choice. [1]
- Vaccinations should include tetanus and clostridial diseases, which are readily available on-farm in a typical sheep operation. [1]

PRICE ESTIMATE

- Gelded males are the most popular form of guard llamas[1], mainly because they are less aggressive to the sheep and have a cheaper upfront cost of somewhere between $300 and $700 (See Figure 5).
- Buying a female llama, which can cost several thousand dollars, would only be worthwhile if you planned to breed or have a use outside of just being a guardian animal.[1]
- Average annual costs for feed were $90 and veterinary costs were only $16. [2]

Table 3. Comparison of characteristics of guard llamas and guard dogs.

	Guard animals	
	Dogs	Llamas
Initial cost	$100-400	$300-700
Bonding/adjustment	1 year	Few days
Feed	Daily dog food	Pasture
Annual expense*	$286	$103
Longevity	On farms 50% lived 3 years	10–15 year
Purchase price per year of use**	$100	$70

* Annual expense included feed and veterinary costs.
** Dogs: assumed 4 years average use ($400 ÷ 4 = $100).
Llamas: allowed 10 years average use ($700 ÷ 10 = $70).

Figure 5: Comparison of characteristics of guard llamas and guard dogs[1]

- Guard dogs are another popular predator control method[1]; however, from a financial standpoint, llamas are a much more cost effective, and long-term option (See Figure 3).

EFFECTIVENESS

- On average, producers lost 26 head per year before obtaining a guard llama and integrating it into their flock (See Figure 6).
- After obtaining a guard llama, that number dropped significantly to 8 head per year, or just 1% (See Figure 6).

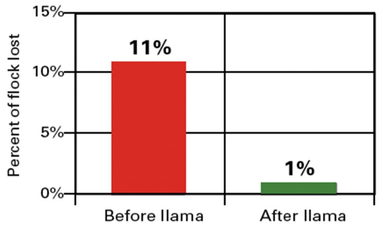

Figure 6: Reported average annual loss of sheep and lambs due to predation before and after obtaining a guard llama[1]

OWNER SATISFACTION

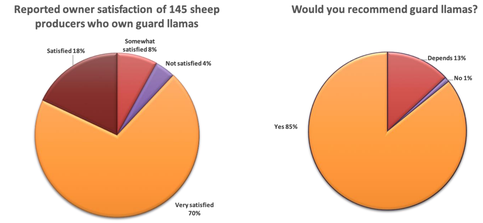

Figure 7: Survey of Owner Satisfaction [1]

RECOMMENDATIONS

•Llamas are a valuable animal that are easily trained, cost effective, and most importantly are able to effectively protect your livestock.

•While llamas are helpful guardians, they should not be your only method to prevent predation and are most effective if used as an added measure with your preexisting protocol.

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