

King Collar: Predator Protection Collars for Small Livestock

by

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Introduction

Predation on small stock in South Africa is widespread. Many graziers will lose up to 30 % and even 40 % of their lamb crop from birth to adulthood, to predation by wild animals. Over 90 % of the predation is by caracal and black-backed jackal. Depending on age, the breed of animal and how the value is calculated, the loss of a lamb will imply a direct loss to the grazier of between R140 (1 Rand = 0.15 US\$) and R275. Typical ewe flock size will range between 500 and 1'000 animals. The average number of lambs dropped per flock of 2'000 animals will be about 700 for animals used in fibre production (wool sheep and Angora goats) and perhaps 1'400 in meat producing animals. There are in excess of 30 millions small stock in South Africa. 1990 estimates are 29,9 million sheep and 2.8 million goats. Traditional control measures have almost exclusively concentrated on the elimination of the predator. Methods used include: hunting by means of dog packs, by means of rifle, leg-hold trapping, poison baits, baited cages, poison collars placed on lambs' necks and poisonous explosive baits. A small number of farmers attempt to exclude predators with electrified fencing. Some farmers attach bells to the lambs' necks, and others slip pieces of old inner tube over the neck.

Both caracal and black-backed jackal use very specific methods of killing prey. Both suffocate their prey by biting the windpipe from the underside. Caracal will stabilise their prey while biting by using their claws behind the head and on the back of the neck. Jackal will bite on the cheek, injuring a nerve running down the side of the face. This injury apparently causes a degree of paralysis. The jackal then changes its grip to the windpipe. Very occasionally jackals have been known to bite in the hind-quarters and attempt to kill in this way.

Innovation

We believe that no amount of hunting will eliminate the predation problem. There will al-

ways be predators that will elude eradication. Many small stock graziers border cattle farmers, game farmers or game reserves, none of whom have an interest in eradicating caracal or jackal. However, accepting a permanent predator presence implies a preventative approach.

Our device attempts (successfully) to armour stock against attack (see Fig. 1). It is important to note that the bells and inner tubes mentioned above attempt to repel predators. They are also not successful for more than short periods as the predators soon adapt to the strange sounds and strange appearance/texture.

Use of quality materials, manufacture and assembly

The collars are manufactured out of black 1mm HDPE sheet. The collars are pressed out using a die-knife and a mechanical press. We have purchased our own press and manufacture the collars on the farm. The collars require no assembly. They are flat, shaped plastic sheet with various slits and holes in them. They are smooth and do not irritate the lambs they are fitted to.

Safety and Ergonomics

The plastic used is inert and contains no poison. The collars are adjustable in size, and so may be "let out" as the lamb grows. Once the lamb has outgrown the small collar, the large one is fitted. The collars do not damage wool or mohair. The collars allow free movement of the neck and head, and do not interfere with suckling or grazing. The collars have several small holes in them in order to allow for the release



Fig. 1: King Collar on sheep: it can be nicely seen how they protect the side of the cheek.

of moisture. Wet wool would attract blow-fly infestations.

Affordability

We sell our collars at R4.00 each for the small size and R5.50 for the large, VAT included. The collars, being made of UV resistant high density polyethylene, should last at least 5 years. They are re-usable and the cost of protecting a lamb to adulthood will therefore be R4.00 + R5.50 divided by the 5 years, totalling R1.90.

Presume a lamb crop of 100, a predation rate of 10 %, a collar protection success of 90 % and a lamb value of R200. An unprotected crop will result in a loss of R2000 to predation. Protection will reduce this by R1'900, at a cost of R160. The only other successful preventative measure – electric fencing – will cost from R10'000 to up to R80'000, depending on the area to be fenced.

We must point out, that while success in preventing attacks by jackal is reported to us by users to be almost 100 %, against caracal predation, the collar is effective but not as successful. Users have described it as “65 %” effective against caracal. We suspect that the caracal is able to hold its prey still with its claws and thus find the small unprotected area of neck, this area is necessary in order to allow the lamb sufficient mobility to eat and drink.

Environmental impact

The collars can be manufactured from “regrind” – recycled plastic, which has the added advantage of being cheaper. The small amount of waste plastic can be recycled.

However, the major environmental impact will result from the cessation of attempts at killing jackal and caracal. These attempts are very often indiscriminate and can impact very heavily on non-target animals. Leg-hold traps are not humane and eliminate many innocent animals. Only the very best packs of hunting dogs can be dissuaded from attacking animals other than jackal and caracal. But it is the (usually indiscriminate) use of poison that causes very significant environmental damage. Many farmers become so desperate that they distribute unsuitable poisons in baits and carcasses, and fail to monitor or clear up the poison afterwards. Other carrion feeders then become targets and significant losses of particularly vultures have occurred in this way. Some poisons do not break down and by remaining in the food chain can continue killing for long peri-

ods. The widespread use of the collars can do much to obviate this damage.

Ease of maintenance and installation

The collars can be fitted and removed in less than a minute per sheep by farm labourers. Adjusting the collars for growth is equally quick and needs to be done every third week in young lambs and perhaps every 3 months in weaned lambs. The collars require no maintenance. This must be contrasted with traditional control methods, all of which require significant and regular time inputs, as well as varying degrees of skill.

Social acceptance

Our sales to date are just over 270'000 collars, the first sale having taken place in October of 1997. We have been somewhat surprised that acquaintances particularly, in spite of appreciating the advantages outlined above and in the face of proof of efficacy, have been reluctant to use the collars. In spite of being farmers ourselves, we have come to the conclusion that farmers are a very conservative and suspicious lot. And secondly, that they have come to hate predators so much that it is hard for them come to terms with control methods that do not result in dead jackals and caracals.

More information on:

<http://brigham.sphosting.com/kingcollar/index.htm>

There is currently a small trial under way at one of the SA agricultural colleges, but no results are available yet. CDPNews intends to keep you updated.