Series: 1-004/2

Managing predation by black-backed jackal

Preventive methods

Controlling a predator population is difficult and has ecological repercussions. Using a combination of non-lethal methods, including adapting farm management and husbandry practices, has proven to be a worthwhile alternative to protect livestock against predators. However, predation management methods that are effective on one farm may not be as effective on another farm. This is because there are many factors on a farm that will influence the predators as well as farming and husbandry practices in that particular area. Because each farm can have a unique set of circumstances, generalisations should be avoided.

When used in combination, some of the methods described here can effectively reduce predation and prevent predators from becoming accustomed to specific preventive predation strategies. The choice of methods to use in combination should be based on the prevailing circumstances.

- ***Fencing***

  Fencing is one of the most preferred methods in South Africa for preventing predation on livestock farms.

  Jackal-proof fencing

  Fences typically consist of wire mesh or closely-spaced wire strand fences, 1.3 m high.

  Disadvantages of conventional jackal-proof fences:

  - expensive to put up
  - jackals can burrow underneath the fence, or use the holes created by animals such as aardvark and porcupine to enter the property
  - individual black-backed jackals can learn to climb the fence.

  But, adding an apron secured with rocks or electrifying an existing predator proof fence can prevent animals from burrowing underneath the fence and exclude jackals more effectively.

  Electric fencing (especially around lambing camps)

  Electric fences may be more effective than conventional jackal-proof fences in controlling the movements of black-backed jackals.

  Although input costs associated with electric fencing may be high, the benefits may outweigh the costs in the long run.

  Lambing in electrified small camps has been shown to completely prevent predation on lambs, but this practice can be costly and labour-intensive, especially in the case of planted pastures.

  Conventional jackal-proof fences and electric fencing can reduce predation if they are properly constructed and maintained.

  In areas where fence lines are the first line of defence against predation, cooperation between landowners in maintaining fence lines to restrict movement of predators increases effectiveness.

- ***Kraaling***

  This method can, in most cases, prevent predation by black-backed jackal at night.

  Disadvantages:

  - trampling of vegetation which may lead to soil erosion, thereby reducing the grazing capacity of the veld
  - parasites and diseases are transmitted more easily
  - production of inferior quality wool
  - reliable and competent shepherds are scarce and costly.

- ***Multispecies grazing*** (for example, cattle and sheep grazing together).

  This method can effectively reduce predation on sheep, but is less effective to reduce predation on goats. Its success depends on whether the different livestock species bond, and whether grazing conditions are favourable for all the species that are going to graze together. If predators habituate to the presence of large livestock, however, this method will not be effective anymore.

- ***Changing livestock breeding season***

  Adapting the time of lambing and calving seasons so that they do not coincide with periods when black-backed jackals have higher energy requirements. This can ensure that there are fewer vulnerable young

livestock available during winter (jackal breeding season, see leaflet no. 1-003: "Feeding ecology of the black-backed jackal" in this series).
Factors to consider before implementing this strategy are market and grazing conditions, increased veterinary and other costs (such as feeding, labour), and biological limits of the livestock. In areas where small livestock of all ages are vulnerable to predation, this strategy will not be effective

- ***Selective grazing*** (avoiding certain areas during periods of higher predation risk).
  Here, it is important to know which areas are prone to predation by black-backed jackals, and during which time of the year. This strategy is not always effective, and care should be taken not to overgraze certain camps.
- ***Herders***
  Shepherds are a reliable deterrent to predators, and may be in a good position to eliminate "problem-causing" predators, which are the ones that approach the livestock.
  However, reliable and competent shepherds are scarce and expensive.
- ***Guard animals***
  Dogs
  Livestock guarding dogs can be very effective to protect livestock against predators, especially when kraaled with sheep at night.
  Disadvantages:
  - they may not be as useful to protect wildlife species against predators because of the habitat preferences of some wildlife species and the dogs not being accustomed to them.
  - the use of guard dogs for extensive sheep farming practices seems limited

Immediate results should not be expected when using livestock guarding dogs. It requires patience, persistence and understanding to train each dog, and maintenance is expensive.

- ***Other guard animals***
  Llama, alpaca, donkey, ostrich, black-wildebeest, etc.
  Success of guard animals to reduce predation depends on the number of guard animals used, topography and size of the area, size of the flock or herd they have to guard, and traits of individual guard animals, such as its size, temperament, alertness and leadership qualities.
  One of the disadvantages of using guard animals is the risk of a guard animal harassing or injuring livestock or wildlife, or affecting their breeding behaviour.
  Shepherds and guard animals are less effective as sheep flock size increases and when flocks are more widely dispersed.
- ***Deterrents*** - *noise, light and scent*
  Objects which generate noises, lights or smells may only be effective for short periods, because jackals can get used to them. Such devices may also be very expensive, and some may only be effective in relatively small areas.
- ***Collars***
  "Dead stop" collars and "King" collars are designed to protect small livestock against neck and throat bites.
  Bell collars, "e-shepherd" collars and ultrasonic collars are designed to frighten predators away.
  Collars such as the "FarmRanger" collars are fitted with cellular technology, sending a signal to the owner's cellphone when abnormal behaviour (e.g. frantic movements) is detected within the flock.
  Due to the black-backed jackal's adaptability, they may learn to capture small livestock fitted with protective collars on other parts of the body.
  Cellular technology is limited by its ability to transfer a signal, and may therefore not work effectively under all conditions. Agri-Alert collars are designed to overcome challenges with cellular signals.

In cases where individual predators are not deterred by preventive methods, lethal alternatives have to be considered. These are described in the next leaflet: Series 1-005: "Managing predation by black-backed jackal – corrective management, or predator control".

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Consult your local DEFF (environmental affairs) or DARDLR (department of agriculture) office for legal aspects regarding predation management