

Supplementary Feeding

Introduction

The primary purpose of supplementary feeding and mineral licks is to address nutrient deficiencies in natural grazing. Proper supplementation enables animals to express their genetic potential by maintaining body mass and condition, supporting reproductive performance, and improving calf weaning weights. Under natural conditions, game would migrate to areas with more nutritious forage; however, the confinement of wildlife on game farms often necessitates supplementary feeding.

Winter supplementation aims to compensate for reduced forage quality and to stimulate appetite so that poorer-quality grazing can be utilised more effectively. Nitrogen-based licks enhance rumen microbial activity, improving cellulose digestion and increasing feed passage rate, which in turn stimulates appetite and voluntary intake. For this reason, appetite-stimulating licks containing urea or protein are generally preferred over energy-rich licks. A range of commercial supplements is available to support these objectives.

Feeding Requirements of Game

Essential nutrients required by animals include proteins, carbohydrates, fats, and water. Under certain conditions, protein and carbohydrate supplementation may be necessary. Balanced concentrates such as pellets or game cubes can be used successfully. Young, growing animals require a minimum of 8% crude protein in forage, while adult ungulates can maintain themselves on approximately 5%, demonstrating their superior adaptation to low-quality veld compared to cattle.

Nutritional demands increase during gestation and lactation. Inadequate feeding during lactation reduces milk production, although females may initially mobilise body reserves. During drought conditions, protein or phosphate licks are of limited value to grazers if energy intake is insufficient, as energy is the primary limiting factor.

Commercially Available Licks and Supplements

A variety of commercially formulated licks and supplements are used in the game industry to supply protein, minerals, phosphate, trace elements, and vitamins. These products are suitable for a wide range of game species and physiological conditions.

Protein-Rich Licks

Protein intake must support tissue maintenance, growth of hair, horns, and hooves, and reproduction. Requirements are highest in young animals and in gestating or lactating females. Plant-based proteins are generally adequate, while rumen micro-organisms convert inorganic nitrogen into high-quality microbial protein.

Protein supplementation is primarily intended to stimulate rumen microbes during periods of nitrogen deficiency, thereby improving digestibility and voluntary feed intake. When crude

protein levels in veld drop below 5%, roughage intake declines sharply. Optimal animal performance requires forage containing 8–9% crude protein.

Common protein sources include lucerne meal, oilcake meals (sunflower, peanut, cottonseed), and certain animal by-products. Non-protein nitrogen (NPN) sources such as urea and biuret are used to improve utilisation of low-quality forage but must be carefully controlled to prevent toxicity. Protein licks are typically provided for four to eight months during the dry season.

Symptoms of protein deficiency include:

- Reduced appetite
- Weight loss and poor growth
- Irregular or delayed oestrus
- Decreased milk production

Energy-Rich Licks

Energy is supplied primarily through carbohydrates, with maize meal being the most common source. Additional energy sources include bran, oats, molasses, and maize germ meal. Energy-rich licks are often combined with protein supplements to increase voluntary intake and are usually provided for four to eight months, depending on forage quality.

The primary objective of winter supplementation is therefore to correct nutrient deficiencies and stimulate appetite, enabling animals to make more effective use of available grazing. Appetite-stimulating protein or urea-based licks are preferred to energy-rich feeds when supplementing natural grazing.

Seasonal and Mineral Supplementation

Summer licks primarily supply phosphate, calcium, vitamin A, and trace elements. Winter licks typically contain energy, protein or urea, minerals, and vitamins. Lick formulation and intake must be carefully controlled, and local veterinary advice should be sought to address area-specific mineral deficiencies.

Natural Mineral Licks

Natural mineral licks occur where animals ingest mineral-rich soil. While they can supplement mineral deficiencies, they are associated with soil degradation, vegetation loss, and increased disease transmission. Utilisation of natural licks is generally lower during the rainy season due to wider animal dispersal and improved water availability.

Medicinal Licks

Increased stocking densities around water points may elevate parasite and disease risks. Medicinal licks can be used strategically, particularly during winter, to administer low-dose, tasteless anthelmintics over several days. This approach is most effective when combined with sound management practices such as deworming during capture or translocation.

Management Considerations

Effective supplementary feeding requires adequate roughage availability and careful management. Key principles include:

- Supplements must complement, not replace, grazing
- Intake must be controlled to prevent toxicity
- Licks should be protected from rain and placed away from water points
- Distribution should prevent animal concentration and veld degradation
- Soil, plant, and animal analyses should inform lick formulation

Recommendations for Highlands Wilderness Game Ranch

Year-round mineral supplementation combined with salt licks is recommended, particularly to address widespread phosphorus and calcium deficiencies. Protein and energy supplementation should be provided from May to September, corresponding with the dry season. Placement of licks should support veld utilisation, minimise degradation, and assist in regulating animal movement. Feeding troughs and protected lick stations are recommended to prevent contamination and nutrient leaching.

Effective veld management remains the preferred long-term strategy to minimise the need for supplementary feeding.

Executive Summary

Supplementary feeding and mineral licks are essential management tools on game farms to address nutrient deficiencies in natural grazing, particularly where animal movement is restricted. Effective supplementation supports body condition, reproductive performance, and optimal growth, enabling animals to express their genetic potential.

Winter supplementation is especially important due to declining forage quality. Appetite-stimulating protein or urea-based licks are preferred, as they enhance rumen microbial activity, improve digestion of low-quality forage, and increase voluntary intake. Energy supplementation plays a secondary role and is only effective when sufficient roughage is available. Nutritional requirements vary by age and physiological state, with higher demands during growth, gestation, and lactation.

Commercially available licks provide protein, energy, minerals, phosphate, trace elements, and vitamins, and can be tailored to seasonal and regional deficiencies. Summer licks typically focus on mineral supplementation, while winter licks include protein, energy, and vitamins. Careful formulation and controlled intake are critical to prevent toxicity and ensure effectiveness.

Management practices such as appropriate placement of licks, protection from environmental losses, and prevention of animal concentration are vital to avoid veld degradation and disease risks. Medicinal licks may be used strategically to support parasite control as part of an integrated health management programme.



For Highlands Wilderness Game Ranch, year-round mineral and salt supplementation is recommended, with protein and energy supplementation during the dry season (May to September). Strategic placement of feeding stations should support veld utilisation and sustainable animal distribution. Ultimately, sound veld management remains the most effective long-term approach to reducing reliance on supplementary feeding.