Managing voluntary lick intake in grazing ruminants

By Ewie Coetzee (Pr.Sci.Nat), ruminant nutritionist, Feedtek

Pastures are unable to fully meet all the nutritional requirements of today's high-producing ruminants. There are long periods in the production cycle during which pastures often lack sufficient levels of one or more key nutrients such as energy, protein, minerals and trace minerals. Supplementing these nutrients in the form of licks is therefore a widely used and essential practice across South Africa.

Formulation and availability

Crucial to this endeavour is the correct formulation of lick supplements that will provide a specific group of animals, at a specific stage of their production cycle, with the correct and balanced levels of nutrients. It is therefore best to call in the help of experienced, knowledgeable and registered livestock nutritionists when formulating lick supplements.

For lick supplements to be as effective as possible, the supplement must always be freely available so that all animals can consume enough nutrients. In practice, however, it if often found that voluntary intake of lick supplements differs from the recommended daily intake. Too much or too little can be consumed. Excessive consumption leads to expensive licks being wasted, whereas if too little is consumed, the problem with deficiency in animals is not adequately addressed – this will have an adverse effect on their production and fertility.

Managing voluntary lick intake

Numerous factors play a role in voluntary lick intake, some of which are highlighted here. The following includes the most important of these, which can be strategically managed to ensure optimum voluntary intake.

Quantity and quality of grazing/roughage: If the available grazing or roughage is very limited or of poor quality, consumption can be higher. Voluntary lick intake is therefore usually higher in sourveld regions than in mixed or sweetveld areas.

For that reason, livestock producers should ensure that enough high-quality grazing and/or roughage is available throughout, before evaluating lick supplement consumption. Using expensive licks to supplement cheap grazing is uneconomical. It can also be dangerous, especially when supplementing non-protein nitrogen (NPN).

Nutritional status of animals: Animals that haven't had access to balanced supplements for extended periods tend to develop mineral and other deficiencies. This can lead to excessive lick consumption, especially in the first few weeks of providing lick supplements to these animals. It is therefore vital that mineral licks (also known as phosphate licks) are always available, either on their own or as part of a protein or production lick.

> "Crucial to this endeavour is the correct formulation of lick supplements that will provide a specific group of animals, at a specific stage of their production cycle, with the correct and balanced levels of nutrients."

Animals, after having been deprived of a lick supplement for an extended period, should only receive a mineral lick for the first 14 days, before urea-containing lick supplements are freely provided, so as to prevent excessive consumption of urea.

Imbalanced lick supplements: Lick supplements containing too little minerals and trace minerals will lead to excessive consumption, as the animals will struggle to adequately satisfy their mineral requirements. Hence, lick supplements should contain enough correctly balanced nutrients, including all the essential trace minerals. In this regard, it is advised to always consult a registered animal nutritionist when formulating lick supplements.

Palatability of lick supplements: Lick supplements should not be too palatable or unpalatable. Therefore, use palatable raw materials such as molasses products and so-called lick intake inhibitors – of which salt for livestock is the most common – judiciously.

How licks are supplied: The most popular practice is to limit the amount of lick supplement put out to the total number of animals, multiplied by the number of days, at the minimum recommended intake. The benefit of this is that the consumption and cost of lick supplements can be carefully controlled.

Unfortunately, this practice often leads to overconsumption when the lick is provided, with very little lick left for days on end. This conditions the animals to act as if the lick is only available directly after being supplied. This leads to the more aggressive feeders gorging themselves as quickly as possible, while shy animals will ingest little or no supplementation.

This poses several disadvantages, including poor utilisation of especially the supplemented soluble proteins and energy, and leaving a large percentage of the herd insufficiently supplemented.

The only way of solving this problem is by providing correctly balanced lick supplements freely and continuously.

The initial consumption may be higher than the recommended consumption, but it will soon stabilise to a consistent level that falls within the recommended minimum and maximum parameters. If it exceeds the parameters, the formulation can be easily adjusted to allow consumption to reach the correct levels.

Placement of lick troughs: Consumption can also be managed by placing the lick troughs at the most optimal spot relative to the drinking water in camps. The further away from the drinking water, the less time the animals spend at the lick troughs. Lick trough space per animal is also essential and should be applied judiciously. If the space is limited, the aggressive animals will shove the shy ones away from the lick troughs.

The higher the recommended consumption, the more space is required per animal. Mineral supplements with a low recommended intake therefore require less lick trough space per animal than protein and/or energy supplements with their higher recommended consumption. Between 5 and 20cm per large stock unit (LSU) and 2 to 10cm per small stock unit (SSU) is typically recommended, depending on the type of lick.

Continuous management

Lick supplements are provided under a wide range of conditions – from large, extensive camps to smaller, intensive camps, and very high to very low quality and availability of grazing. The type of animals and stage of production may also vary.

Furthermore, a variety of lick trough types are used, which also affects voluntary intake. Hence, it is important that livestock producers take their specific circumstances into consideration when formulating and putting out lick supplements. Norms that apply in an excellent rainy year do not necessarily apply in drier years, and the management of lick supplements will then need to be constantly adapted to meet changing circumstances. SF

For more information,
send an email to the author
at ewie@feedtek.co.za.