

## **The importance of supplying the correct nutrients in winter**

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*The importance of lick supplementation of livestock during the winter months cannot be over emphasised. As forages mature its quality, and especially protein content starts to decline. In the light of this, what, as a farmer, can you do to ensure that your veld can sustain healthy animal production?*

### **Introduction**

The predominant energy source available to grazing animals during the winter months is the low quality veld grass. Grass quality is considered low when the crude protein content drops below 7%. As grass matures, the fibre content increases, while the leaves and protein content decreases. Grass also becomes unpalatable and at the same time, forage intake and subsequently total energy intake declines.

During autumn and early winter months the protein content of veld and some summer grass pastures is nearly always inadequate to sustain healthy animal production and therefore makes protein supplementation essential during these periods. As most of the breeding cows in our country is pregnant by now, the natural veld can no longer provide in their nutritional needs and supplementing the veld with a protein lick to supply energy in early winter, becomes a necessity.

### ***How does supplementing protein in early winter, provides energy?***

The rumen microbes have a basic requirement for protein (nitrogen). If this requirement is not met, the grazing animal simply cannot digest the ingested forage effectively and more time is required for digestion. The rumen takes longer to be emptied and the animal compensates for this by lowering its intake.

Lower grass intake can lead to an energy shortage as not enough grass is ingested to provide the animal with enough energy. To rectify the problem, people often supplement animals with energy – dense supplements such as maize. This practice however, does not lead to the desired results. The reason for this is the fact that energy is not the first limiting nutrient, protein is and an animal will only respond to additional levels of any one nutrient if that nutrient is the primary limiting nutrient. In early winter, when grass quality starts to decline, the first limiting nutrient is protein, if one provides additional protein in the form of a lick, the rumen microbes' needs are satisfied and grass can be digested. The grass moves through the rumen much faster, forage intake is increased and the animal is supplied with the needed energy.

### **Supplying protein**

The supplementation of protein to grazing animals is one of the most expensive components of a lick and farmers often limit the inclusion level thereof to the minimum. The supplementation of the correct amount of protein is however essential in order to obtain maximum forage intake.

Thanks to the ruminant's ability to utilise urea (a non-protein-nitrogen source), a part of the natural protein source can be supplemented with urea. Urea will provide the animal with the necessary protein without the high cost of natural proteins (See Table 1 for early winter licks).

### **Winter periods**

Winter can be divided into two periods. The first is the early winter as discussed above with its protein shortage and then late winter where not only do you have low quality grass, you also have an overall shortage in available grazing. This will ultimately lead to low grass intakes and a low energy supply to the animal. For optimal reproduction it is essential to maintain the body condition of reproducing animals during this period. The correct supplementation of protein, minerals and also at this stage energy, is required.

### **Balance**

As everything in nature, the nutrients given to an animal must also be in balance. Nitrogen (protein), phosphorus and energy levels in pastures tend to move in parallel. To explain this: During summer, pastures can provide the animal with enough protein and energy, but South African pastures lack

phosphorus. To balance the nutrients, phosphorus must be supplemented. The same applies for early winter when the pastures have the potential to supply energy, but lack protein and minerals. To balance the nutrients one must supplement protein and minerals (phosphorus). During the late winter, when the grass cannot supply enough of either of the nutrients, all three nutrients must be supplemented.

To supply the different nutrients as discussed in the above mentioned, the following recipes can be used to mix one's own licks.

**Table 1 Early and late winter supplementation for cattle**

| Component                | Kg/mixture     |                |                |
|--------------------------|----------------|----------------|----------------|
|                          | Lick 1*        | Lick 2*        | Lick 3**       |
| Maize                    | 250            | 250            | 300            |
| Oilcake                  | -              | 100            | 300            |
| Feed Grade Urea          | 150            | 150            | 100            |
| Kimtrafos 12             | 150            | 150            | 75             |
| Kalori 3000              | 50             | 50             | 25             |
| Feed Grade Sulphur       | 7              | 7              | 5              |
| Salt                     | 350            | 350            | 300            |
| <b>TOTAL</b>             | <b>957</b>     | <b>1057</b>    | <b>1105</b>    |
| <b>Composition</b>       |                |                |                |
| Protein (%)              | 50.9           | 49.6           | 40.8           |
| ME (MJ/kg)               | 3.7            | 4.4            | 6.5            |
| Calcium (%)              | 4.2            | 3.8            | 1.9            |
| Phosphorus (%)           | 2.0            | 1.9            | 1.2            |
| <b>Intake, g/cow/day</b> | <b>350-500</b> | <b>350-500</b> | <b>500-600</b> |

\* Lick 1 can be used on sweet veld and lick 2 on sour veld during early winter.

\*\* Lick 3 can be used during late winter to provide the animal with protein, energy and phosphorus

### Summary

The main purpose of winter supplementation is to supply the animal with the correct nutrients, in times when the natural veld can not provide it. This is done in order to minimise weight loss during the winter, so that cows can calve in a relatively good conditions and can become pregnant within three months after calving.

The nutritional input made during this winter period will be well rewarded in terms of conception-calving- and weaning percentages in the following season.