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SUPPLEMENTATION OF GRAZING BEEF CATTLE WITH FEEDTEK

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The aim of every cattle farmer should be to realise the most profit with his available resources (land area, rainfall, vegetation, animals and available technology and inputs). The profitability of any beef cattle operation depends on two main criteria namely growth and fertility.

The fertility of a beef cow is influenced by many factors, of which her nutritional status is the most important by far. The nutritional status of the cow is directly dependent on the nutritional value of the grass. Ruminants evolved over tens of thousands of years to be able to utilise grass. Grass remains the cheapest and best source of nutrition for cattle, by far. A cattle farmer therefore first needs to be a grass

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farmer and only secondly a cattle farmer. The golden rule is – look after the grass and it will look after the cattle. Unfortunately grass goes through an annual cycle in which its nutritional value varies quite a lot. This results in cattle only being able to calve down on average every two years when they only have grass as nutritional source. For the modern cattle farmer to be profitable, he needs to produce at least 75 – 80 calves per 100 cows per year. In order to achieve this it is critical to supplement the animal grazing the grass with the lacking nutrients to ensure optimal fertility of the cow. This is done through lick supplementation. For the farmer to know which nutrients to supplement, he first needs to know what happens with the grass throughout its yearly cycle. Grass goes through three distinct phases every year namely:

- A phase of growth (spring to late summer)
- A phase of seeding (late summer to fall)
- A phase of woodification (winter)

During the growth phase (which coincides with the rainy season), grass contains high levels of protein and is also very palatable and digestible. Animals will therefore improve in condition during this period, which makes this the logical time of the year to have the breeding season.

During the seeding phase the grass moves its nutrients down to its roots (to survive the next winter). The protein content of the grass therefore drops sharply, but it still contains adequate levels of digestible material. Animals will therefore maintain condition during this period.

During winter (the dry season) the grass will become more woody (known as lignification), which results in much lower palatability and digestibility. Intake of grass drops sharply and animals will lose condition during this phase. This difficult time also normally coincides with the calving season and early lactation, when the animal's requirements for nutrients are high.

There are four major nutrient groups which we need to supply to the cow namely energy, protein, minerals and trace minerals. The mineral status of the grass will depend on the mineral status of the soil. Southern Africa's soil is deficient in phosphorus and most of the essential trace minerals. Lick supplements therefore need to supply these nutrients throughout the year. During the seeding phase protein supply by the grass also becomes deficient and it needs to be supplemented. During the winter phase not only protein but also energy supply becomes deficient and needs to be supplemented. We therefore have 3 distinct lick supplementation seasons with 3 different types of licks namely:

Season supplement	Nutrient deficiencies	Type of lick
Summer growth phase	Phosphate and trace minerals	Mineral Lick
Fall and early winter - seeding	Protein, phosphate and trace minerals	Protein Lick
Winter - lignification	Energy, protein, phosphate and trace minerals	Production Lick

It is very important to correct all the nutrient deficiencies in the correct balance – it is very expensive to over supply one nutrient while under supplying another. Therefore it is recommended to use scientifically balanced lick concentrates which provides all the deficient nutrients in the correct ratio to each other. Feedtek has developed a range of concentrates containing no carriers or fibre, making it the most concentrated range available. This means that the farmer pays the minimum transport cost per unit of nutrient and can make maximal use of home- or locally produced raw materials.

Examples of licks for beef cattle mixed with Feedtek concentrates

Ingredient	Mineral Lick	Protein Lick	Production Lick
Maize meal / Hominy Chop		320	520
Molasses meal		80	80
Salt	500	350	250
Green Grazer 126	500		
Veldgrazer 128		250	150
Total (kg)	1000	1000	1000
Composition (%)			
Protein		35,5	24,3
Protein derived from NPN (% of total)		90,4	79,1
Calcium	10,1	3,3	2,0
Phosphate	6,3	1,3	0,9
Magnesium	3,4	0,7	0,5
Sulphur	2,6	0,6	0,4
TDN (Energy)		32,8	49,2
Recommended Intake – cattle (g/day)	100 – 200	450 - 700	650 - 1000

Molasses meal is added to bind the licks and prevent wind loss. It may be replaced with molasses syrup if preferred.

Basic lick management principles

- Licks should be provided 365 days per year to prevent the development of mineral hunger
- Licks should always be provided unrestricted to achieve the most controlled intake
- If animals did not have access to licks for 14 days or more, urea containing licks (protein licks) should be introduced carefully to prevent urea poisoning. The safest way is to first introduce the mineral lick for 1 week followed by a 50:50 mixture of the mineral lick and the protein lick for another week before going onto the protein lick alone.
- When urea containing licks are fed, lick troughs should always be able to drain rain water – if the rain water accumulates on top of the lick the animals can get poisoned by drinking the water

- Lick intakes should be measured to ensure that animals are not consuming too much or too little of the lick. This is done by adding a known amount of lick to the troughs and then weighing back the remaining lick after seven days. The amount of lick consumed is then divided by the amount of animals and the amount of days.
- What do you do if animals over consume their lick? (on the condition that adequate levels of quality grazing is available and animals have been adapted for 14 days)
 - o Replace 50 kg of maize meal / hominy chop with salt per ton lick equivalent
 - o Move the lick troughs as far away from the water as possible
 - o Decrease the amount of available trough space
- The opposite is done in case of under consumption of lick
- Recommended lick trough space is two cm per head (50 head per metre) on mineral licks and five cm per head (20 head per metre) on protein and production licks
- Licks should always be mixed very thoroughly to prevent toxification.

How economical are licks?

Research has shown that animals that received a balanced lick supplementation program throughout the year, compared to animals only receiving salt, produced a minimum of 20 more calves per 100 cows per year while weaning weights increased by a minimum of 30 kg. This additional income would normally be around 3 times the annual cost of the licks, depending on the prices of weaners and the cost of the ingredients included in the licks. This excludes the huge additional advantage of having more female replacement animals which are more fertile because they are heavier when put to the bull. Lick supplementation therefore remains one of the best investments a cattle farmer can make to improve profitability.

Why use Feedtek?

The Feedtek macro premixes contains all the critical nutrients required by the modern high producing animal in one handy ready mixed pack without any carriers, fiber, natural protein or energy. This minimizes the transport cost per unit of nutrient. No weighing off of critical nutrients is required and it also enables the farmer to make maximal use of home- or locally produced roughage, energy and protein sources, providing the full benefit of home mixing to the farmer. As energy and protein sources are not part of the macro premixes, licks can easily be adapted for different stages of production without having to change the premix.



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