Green season supplementation:

The broader picture

by
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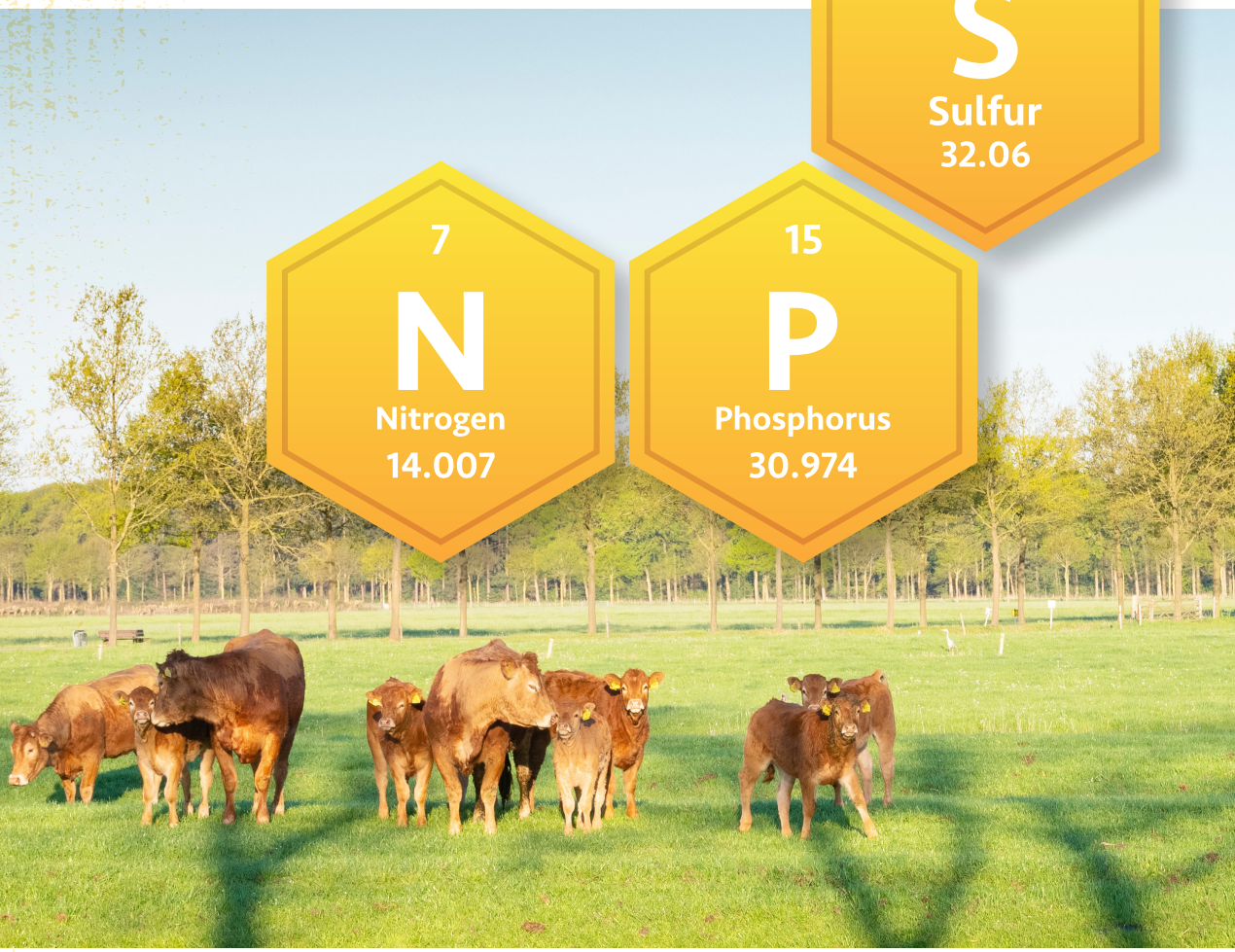

The green season is a wonderful time of the year, with abundant, good-quality grazing typically available. Livestock are usually in fine condition, calves and lambs are seen everywhere, and this makes for an overall enjoyable experience on the farm. During this time, livestock producers must look to utilise the conditions and maximise animal production, while keeping one eye on fodder-flow planning for the dry season.

A broader perspective

Due to the quantity and quality of green veld, the approach by many farmers is to limit supplementary feeding and save on feeding costs during this time, so the focus is mainly on phosphate supplementation. Even though phosphate supplementation is correct, there should also be a broader consideration towards optimal utilisation of fodder, as well as preparing animals for reproduction and the rigorous demands the dry season poses, especially on body condition.

It is well known that green veld is easily digestible due to its low fibre content and relatively high protein content, even though it is mostly of lower quality. Moisture levels are typically high, limiting the effective intake of nutrients due to the rumen-filling effect. Phosphorus content (but also that of other macrominerals and trace minerals) is mostly suboptimal for the requirements of high-producing animals. Mineral levels are also highly variable and not always present in the ideal ratios to each other, while bioavailability is an issue.

Phosphorus and more

The consensus from years of research is that balanced supplementation of a wide range of macrominerals and trace minerals is important to maintain modern high production and reproduction levels. The benefits of phosphorus supplementation on South African veld grazing have been proven many times over. It is still one of the best investments a livestock farmer can make. Always supply highly available sources and keep in mind that it should be provided in the correct ratio to calcium.

Aside from phosphorus, magnesium is a critical element for energy metabolism, muscle function, and bone formation, among others. It is also essential for cellulolytic (fibre fermenting) rumen bacteria and deficiencies cause less-than-ideal fibre digestion and reduced intake, which is obviously a significant problem for the veld-based ruminant. Especially young grass is deficient in magnesium, while the bioavailability from feed ingredients is very low, more so at typical higher rumen pH of animals on roughage-based diets, for mature ruminants, and when potassium-rich fertiliser is applied to irrigated pasture. Supplemental magnesium should, thus, be provided in the correct ratio to phosphorus.

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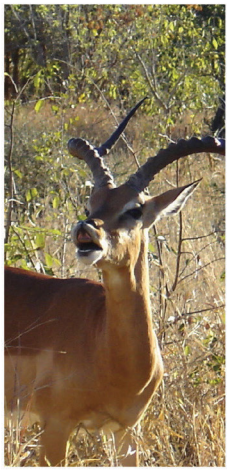


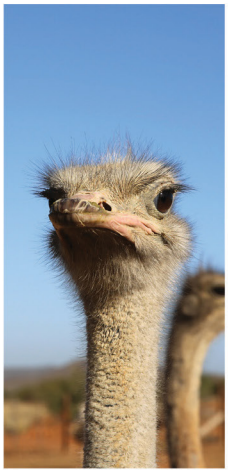



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Efficient rumen metabolism

Another well-known macromineral, integral to efficient rumen metabolism, is sulphur. Rumen microbes synthesise microbial protein from the soluble protein green veld supplies but require sulphur to complete this process. Furthermore, the sulphur-containing amino acids produced by microbes are important components for wool and mohair production, as well as efficient muscle growth. So, sulphur should be part of a good green season supplementary programme. The catch, however, is that it interacts with many other minerals, and if excessively ingested, rumen metabolism is impeded, while the availability of trace minerals such as copper and selenium is reduced. Again, the key is balanced supplementation and sulphur should not just be added indiscriminately to licks.

> **“Consideration must be given to the strategic use of organically bound trace minerals, where a mineral is bound to an amino acid or protein complex, for example.”**

Never underestimate the ‘glue’

Macrominerals should always be the starting point, but never underestimate the role that trace minerals play in the utilisation of these macrominerals and efficient metabolism in general. These small critical components of the diet are the ‘glue’ that keeps everything together. If deficient or even just suboptimal, growth, milk production, and wool/mohair quality suffer, but effects are even more pronounced in fertility and in disease resistance. Stress factors such as heat, high humidity, parasites, moist soil underfoot, and high production and reproduction demands further exacerbate the situation and increase daily requirements.

To top this, most veld grazing and feed ingredients either contain low or imbalanced levels of trace minerals that are largely low in bioavailability. High rainfall in the green season also causes the leaching of trace minerals and, subsequently, reduced levels in the plant material. Continuous supplementation of especially cobalt, copper, manganese, iodine, selenium, and zinc in highly available forms is, therefore, vital for profitable livestock production. Trace mineral nutrition is a minefield of antagonisms, variations in bioavailability between sources, and correct ratios, and should be handled by specialists with extensive knowledge on the subject.

More bioavailable sources

Consideration must be given to the strategic use of organically bound trace minerals, where a mineral is bound to an amino acid or protein complex, for example. Even though more expensive per milligram supplied compared to inorganic forms, it is highly bioavailable and not influenced by interactions. Organically bound trace minerals can be a cost-efficient way to increase trace mineral levels quickly and effectively in the animal, especially where antagonistic factors are significant.

Energy, strategically

The relatively high moisture content of young green fodder effectively limits dry matter intake and can lead to induced

energy deficiency, especially in high-producing animals. This is especially important, given that cows are typically lactating during the green season and must get pregnant at the same time. Ewes are either in lactation or being prepared for mating, while replacement animals should be growing at a high level to attain good body weight and condition before the start of the dry season. Strategic energy supplementation in the form of grain bridges the gap and can have a pronounced effect on daily gains, body condition, and conception. High protein intake from grazing will also be better utilised for functions of growth and milk production, as energy is required for the building process.

Bypass on top

Good-quality bypass protein from oilcakes can be supplied additionally to especially small-stock animals and replacement cattle to further increase production levels, as protein quality from veld grazing and even green irrigated pasture is low. The production and reproduction goals of the herd, body condition of animals, grazing conditions, stocking rate, and cost of feed ingredients will determine whether to supplement additional energy and bypass protein at a given time. The successful future reproduction of replacement animals should be an important factor to consider.

Supplementing NPN

Finally, there is the question if the supplementation of non-protein nitrogen (NPN), such as urea, is necessary on green veld. The answer is complex, and a few factors should be considered. Very lush, young green pasture contains more than enough soluble protein and additional NPN will simply overload the nitrogen pool, and the excess needs to be excreted, using energy in the process. As the grass becomes more mature, however, protein content decreases, and a small amount of supplemental NPN might be advantageous for rumen digestion. Sour veld will typically grow faster and decrease more rapidly in quality compared to mixed and sweet veld, justifying NPN addition more easily. This must, however, be done very sensibly and at much lower levels than that used on dry veld grazing.

The less selective animals graze, the less protein can be selected and NPN addition becomes an option. Small-stock animals that graze more selectively would mostly not require NPN on green veld, but cattle kept in larger herds, for example, might benefit from the inclusion thereof. It is important, though, to remember that energy should be supplemented together with NPN to ensure good utilisation by microbes. And there is an element of risk when rainfall does occur, so all warnings must be heeded and lick troughs must be protected against rain.

Investing in the future

Green season supplementation should be done with a future-orientated approach, especially for reproductive animals. Investing in correctly balanced supplementation will give grazing livestock the best platform to enter the dry season in good condition and produce good-quality future offspring. ®