

Are we feeding our animals properly?

DE Short

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Long ago I read a science fiction story about a city in which two populations lived side by side, identified by the colour of their clothes, say the reds and the blues. Some ancient dispute had divided the people, and refusal to talk to each other had evolved into an innate inability to even see each other. They rubbed shoulders on the streets, but neither side knew of the other's existence. The climax came when a red-clothed cop, chasing a red-clothed robber, accidentally shot a blue clothed bystander whom his eyes were trained not to see. The blood on the pavement, the removal of the blue shirt to allow medics to attend the wound, made suddenly and starkly clear to each side that the other side existed. Then came the painful reconciliation.

I sometimes wonder if the same situation does not exist between grassland scientists and ruminant nutritionists. Neither side seems to want to work with the other to the benefit of stock and range husbandry. Every year the grassland

scientists do their trials- three camp four camp, rest, burn, no burn, spring graze, short duration etc. Every year they faithfully apply the licks presumably recommended by the ruminant nutrition department- concoctions of urea, phosphates, salt and lime in winter, concoctions of phosphate, salt and lime in summer, seemingly scribbled out on the back of a cigarette pack. These ineffective supplements are fed at the absolute minimum level possible for the shortest possible time. Every year, stock production on these supplements remains at about half of what it could be, and at least six months of any year is wasted simply trying to keep grazing animals alive.

We seem to have forgotten that when the first trials on winter protein were done almost a century ago, the protein was fishmeal. Results were outstanding- higher calving percent, heavier weaners, higher re-conception rates. Then urea came, as a cheap substitute for some of the protein. The watchword is some of the protein. Unfortunately for our

long suffering livestock, urea usurped high-bypass natural protein and became practically the sole protein source. "Government licks," developed on research stations, and faithfully used by grasslands scientists, violate just about every principle of ruminant nutrition that can be violated. They are toxic cocktails in which 95% of the protein is urea-derived. Most commercial licks follow the same pattern, disguising the urea with molasses, or a smattering of maize. Feeding rates are designed to keep animals just on or above malnutrition levels. All over South Africa, these dangerous and inefficient supplements are fed too late and at too low a rate to have any real effect on the animals they are supposed to nourish.

There are huge opportunities for animal nutritionists to justify the diplomas on their walls by guiding grassland scientists in the correct formulation and use of supplements. High quality natural proteins, fed at the correct levels, and fed for longer than recommended by all the books, have the potential to double performance on natural veld, while also eliminating some of the negative effects of selective grazing. Urea has its place, but it is only a place. If you do not blend urea properly with high bypass natural protein, you may as

well throw it onto the ground—most of it gets there anyway in the form of urine excreted by the animal.

Here are some rules of thumb that seem to have been forgotten in the race to make the cheapest, nastiest supplements available:

1. No more than 33% of the protein to come from urea or other NPN sources- therefore 67% of the protein must come from high bypass oilcakes or fishmeal - leave out carcass meal because of "mad cow" scares.
2. A true supplement is fed at a maximum of 5% to 10% of an animal's dry matter intake. At a DM intake of 3% of body weight, that would limit a 300 kg long weaner to a maximum of 450 to 900 grammes of supplement per day. Low levels of highly concentrated supplements ensure that the animal remains hungry—and the only thing then left to eat is grass, which it will consume and digest in surprising quantities.
3. Half the animal's protein requirement should be derived from the supplement in winter. If a 300 kg animal needs 700 grammes crude protein to keep a reasonable growth rate, this means 350 grammes must come from the supplement. This means that the supplement must be have 450 to 500 grammes of crude protein per

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kilogram of supplement. At this concentration, this long weaner would need 700 grammes supplement to meet this requirement (and, by the way, if only 33% of the protein can come from urea, the supplement is limited to about 5% urea or 50 grammes urea per kilogram of lick).

Time of feeding

Everybody knows that South African rangeland, in most areas, is good for growth for about six weeks of the year, and good for little else for the rest of the year. That is because it is inherently low in protein. If this high quality, highly concentrated protein supplement is fed, at differing levels, for most of the year, it will transform performance on natural veld to the level of performance in irrigated fertilized pastures. And because an animal fed the correct levels of the right quality of protein will eat everything including old newspapers, this supplementation will absolutely transform grazing patterns.

Another opportunity that seems to have been ignored by grassland scientists and ruminant nutritionists: biotechnological products. There are natural products, not hormones or chemicals, which can totally transform ruminant function. Some examples are:

Ammonia-adsorbing feed supplements.

These products, initially derived from the yucca cactus, when mixed at low

levels in animal feeds, have the ability to trap ammonia. Used with pigs and poultry, they reduce the amount of free, toxic ammonia in the animals' dung, to the extent that in some countries feed companies have to use them by law to protect farm workers' health.

However, the same additives in ruminant feeds have the ability to trap ammonia in the rumen—holding it for more effective digestion by rumen micro-flora. The result? Any urea used in the feed is utilized with far more efficiency and far less waste, as is the highly soluble protein found in most grasses.

Specialized living yeasts

These do not occur naturally in the rumen, but when introduced in a supplement, have the effect of stimulating rumen micro flora into feverish activity—digestion of roughage is increased, intake is increased, performance is increased.

Chelated trace minerals.

These are trace elements bonded to protein molecules: more easily digested and more efficiently utilized than inorganic trace minerals. Replacing 30% to 50% of the chemical trace elements with Chelated trace elements will improve animal performance.

It is duty of grassland scientists and animal nutritionists to break out of their separate glass cases they have been working in for the past century, and do some real, coura-



geous experimentation that could revolutionize the ruminant industry in South Africa. The nutritionists must go back to the basics, get away from this low-grade, low performance cycle of a handful of urea and salt in winter and a thimbleful of phosphate and salt in summer, and formulate real supplements that will do some real work for the animals to which they are fed. The grasslands scientists must observe and take into their results, the huge effect that these highly sophisticated, high performance supplements will have on grazing intake, grazing patterns and per-

formance, winter and summer. The supplements and the grazing trials have to be integrated: they cannot be regarded separately

And before everybody cries "but it is not natural!" remember that when the first caveman captured the first wild goat and domesticated it-life on the open range ceased to be natural - and by the way, what is natural about feeding chemical fertilizer to an animal and expecting it to perform?

