

Coping with the dry season

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In Southern Africa, the dry season is upon us. Traditionally, this means the time of “mashanga” where animals are free to graze in the harvested fields.

As livestock farmers we need to know what is happening to the veld, and what this means to our animals. We then need to know what steps we can take to soften the worst effects of the dry season.

To start with, the veld is dry. This means the grasses have become woody, brown and dry, a natural process called **lignification**.

What we need to appreciate from the onset is that grazing livestock get their nutrients when they break down the cell wall of the grass and access the soluble and easily digestible cell contents inside. This process is aided by millions of rumen microbes which live inside the rumen. When the grass is young and green, this process is fast and simple because at this stage the plant cell walls are thin and easy to break down. Moreover, the cell contents of the stem and leaves are rich in proteins and energy at this stage. The rumen micro-flora are vigorous because they are getting enough energy and proteins to flourish. No wonder our animals get fat when they feed on green veld!

However, as the dry season starts, the grass gets dry, brown and hard. This is caused by a normal growth process within the plant. Remember plants grow with the purpose of preparing for future propagation. As such as grasses mature, all the nutrients are channelled to the future plant: through the seeds or roots. That is why a green maize plant is excellent food for animals but the mature maize stalk is really poor in nutrition. When the maize plants are dry, all the nutrients are now concentrated in the seed (which is the maize grain). Furthermore, as the cell contents move to the seeds or roots, the cell walls are fortified (hardened) with cellulose, which is a stiff and hard compound which is difficult to digest for animals. Hence in the dry season, the plant is drier and difficult to digest, at the same time its nutritional value is significantly reduced because the sweet cell contents have moved to seeds or roots (storage)!

Conversely, a failed crop means that not all the cell contents have moved to the seed or roots, implying that straw from failed maize crop is relatively better quality feed for livestock!

Ok, so let's break it down.

First, growing/green plants are excellent sources of livestock nutrition because their cell contents are rich in energy and proteins. Furthermore, the cell contents are easily accessed by animals because the cell walls at this stage are soft and easily broken down. The grass tastes great too!

In the dry season, things are trickier. The rich cell contents move to the seeds or roots, leaving the stem and leaves hardened by lignin, a process we have called lignification. As if that is not enough, the lignin makes the plants tough to digest (a bit like eating the meat of an old animal!). Because of dryness, the taste or palatability of grasses is much lower.

So what does this mean for the animal?

To start off with, the rumen micro flora are not getting enough energy and protein to flourish. They are weak and starving, hence they will not work vigorously. This in turn means that the animal's dry food will mostly pass through the digestive system partially digested. Hence, the animal passes out lots of partially undigested dung. Remember, even if the cell walls are broken down, the cell contents contain little energy and protein at this stage, compared to the growing/green stages. Because of this, the animal does not eat as much, plus the food does not move fast inside the digestive system of the animal.

No wonder if you open the stomach of an animal which dies of starvation, you find lots of dry unfermented grass inside the rumen, dry contents inside the omasum and perhaps a full gall bladder, and empty small and large intestines. All signs of an animal which has not been eating for some time!

So in the dry season, an animal cannot meet the nutritional requirements for maintenance and growth. What do we mean by this?

Maintenance simply means an animal is alive, neither gaining nor losing weight. Production (growth, reproduction, and milk) happens when an animal has enough food for maintenance, and then some more for production.

Obviously, in the absence of supplementing, we do not expect much productivity from our animals. In fact, the opposite of production happens: animals lose condition.

Animals lose condition when they are not taking in enough nutrients to maintain their body mass. This occurs as the animal draws down its body reserves of fat and muscle to maintain its life. Literally, the animal begins to digest its own flesh, hence it actually loses weight! This process is a natural coping mechanism for animals, and if not excessive, animals can survive a bad patch that way.

It gets even trickier for a suckling cow. Milk production requires more nutrients than simple growth. Moreover, milk production is under strong hormonal control, so it will continue regardless of animal condition. A cow can literally milk itself to death!

So from the above discussion, we have a clue of what we can do now to tide over the dry season.

1. Make sure that your animals do not have a big worm burden. Worms suck blood and otherwise feed on the little nutrients that the animals are getting from the dry veld. They compete for nutrients, thereby exacerbating/worsening and already difficult situation.

Dose/drench your animals against flukes, roundworms and tapeworms. You can use many dewormers on the market, e.g. Systamex Plus Fluke; etc.

2. Wean early. The ideal situation is that if you cannot supplement, no animal should be suckling in the dry season.

3. Suckling animals and weaners (young ruminants) are at great risk. Young animals which are not yet full ruminants are at great risk of starvation. More attention should be put on these.

4. Consider de-stocking. Sell off excess stock whilst the animals are still in good condition.

5. Make maximum use of dry crop residues by “treating” them: soaking in salt water to improve their digestibility and palatability.

6. Supplement using ready energy and protein for rumen microbes: usually molasses and urea to keep the rumen micro-flora vigorous.

7. Harvest green tree leaves and mix them with straw. It greatly aids palatability and digestibility of the whole ration!

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