

Grazing management in drought prone regions

Farmers, often described as ecosystem managers, are faced with the challenge of balancing demand for forage with supply. Coupled with the ever-changing rainfall pattern, this management practice requires precision. Roughage forms the basis of livestock production as it is the most economical, efficient way of feeding. It is the farmer's duty to ensure that the veld is in a productive, healthy state and that it is sustainable. The implemented grazing system should be veld and cattle orientated.

Before grazing management can be understood, the physiological response of plants during drought must be understood.

Impact of drought on rangelands

Lack of moisture suppresses plant growth and root development. Inadequate roots limit the plant's ability to absorb nutrients and moisture from the soil, which further restricts plant growth. The plant is forced to use stored sugars to grow replacement leaves.

Plant vigour weakens during droughts and the vegetation becomes sparser, affecting the microclimate. This in turn increases soil temperature and the rate of evaporation, making the veld increasingly sensitive to drought and grazing. As the length and severity of the drought increases, plant mortalities also increase, especially with shallow rooted grass species.

Preparing for drought

Veld conditioning assessments must be done regularly to ensure that the stocking rate is optimal while maintaining as much residual forage as possible. Re-evaluate the stocking rate every season. It is advisable to manage grazing in such a manner that a 'reserve' pasture, which has been rested for an entire growing season, is available. This



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will minimise overgrazing. It is better to destock rather than cause permanent damage to rangeland resources.

Improve the grazing distribution in camps and move salt and supplementary licks to areas not preferred by cattle. Do not overgraze, as more intense grazing prior to the drought will extend the vegetation's recovery time.

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Biodiversity is key; different species have different physiological abilities to cope with drought. For example, *kweek* (*Schmidtia pappophoroides*) provides palatable grazing during normal to wet seasons, while *blinkaarboesmangras* (*Stipagrostis uniplumis*) is poorly grazed.

However, when rainfall is minimal, the *kweek* cannot sustain animal production and the *blinkaarboesmangras* usually takes over that role. The same is true for red grass (*Themeda triandra*). These species complement each other and veld with species diversity is more resistant to drought.

Drought management

There are various grazing systems, including continuous grazing, rotational grazing and strip grazing. Each of these systems has its own advantages and disadvantages, which is correlated with the rainfall distribution on the farm.

Personally, I would recommend the rotational grazing system. Rotational grazing has been defined by Booyesen (1967) as the grazing of a group or groups of animals rotationally, in enclosed camps, where there is at least one more camp than the number of animal groups. This system allows a resting period for plants and can improve overall range health. The primary objective of this system is to

control the frequency and intensity at which plants are grazed and reduce selective grazing of palatable, desirable grasses.

During a drought, animals should not be allowed to graze selectively, or to trample and waste forage. Rotate your herd before this happens.

Beware of green grass fever

It is tempting for a farmer to swing open the gates when seeing the fresh green colour of the pasture after a miserable drought period. This is what I like to call green grass fever.

Remember that after prolonged dry periods, plants are more susceptible to overgrazing and the soil compacts more easily. The aim at this stage is to promote highly productive, palatable grass species above species that are unpalatable, non-nutritious and lead to a decrease in the carrying capacity of the veld.

During the early growth stages of recovering plants, selective grazing tends to be a problem. The most palatable grasses are repeatedly grazed, which leads to permanent veld

deterioration due to plant root die-off. It is necessary for grasses to sustain leaf material as long as possible so that photosynthesis can occur to restore the energy reserves of the plant and for plant vigour to increase. It is not recommended that pastures be grazed below 15cm to 25cm. The residue should have enough length to provide shade to the soil and reduce evaporation, which helps maintain soil moisture.

Try to rest the veld for four to six weeks after receiving adequate rainfall. Some plants tend to accumulate nitrate under dry conditions, which may result in nitrogen poisoning in livestock. Apply rotational grazing for short periods to allow longer rest periods for grasses. Camps with deep soil and wetlands should be grazed first after good rainfall; this veld can tolerate grazing more easily than camps with shallow soil.

Manage grazing so each camp has enough time to rest and rotate the herd at least once every two weeks. Sweetveld camps need a longer recovery period to increase growth vigour and reserves than sourveld camps. Monitor the increase of lick intake and decrease

of nutritional value of the forage. This can be used as an indicator of when to rotate your herd.

Conserve the grass

Drought is inevitable, but permanent veld damage is not. Rotational grazing should be managed in a sustainable way to increase desirable plant species, biomass, root development and energy reserves throughout the year. This reduces moisture loss from the soil and increases plant biodiversity. Damage due to drought will be minimised if the plants are in good condition.

Even the most advanced grazing system cannot overcome the effects of incorrect stocking rates. Manage the grazing in such a way that enough reserves are available to sustain the core herd. Management of grazing is equally important prior to, during and after drought; grazing should always be managed with drought in mind. **SF**

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