

Spotlight on Agriculture

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The implementation of a fodder bank grazing system in the Camel Thorn Savanna

INTRODUCTION

In 1985, a project was started on Sandveld Research Station, where different stocking rates (15, 25, 35 and 45 kg/ha) and different frame type animals were used to determine the influence of these, together with rainfall, on the condition of the grass layer. The results of Phase 1 of the project are currently being analysed for final results whereas the project itself is currently being extended to Phase 2 to also determine what influence the implementation of a rest period will have on the veld condition. The frame type of the animals will no longer be taken into consideration, since only one frame type will be used, while the four stocking rates will also become only one according to the capacity of the veld.

THE FODDER BANK GRAZING SYSTEM

Resting of veld has the purpose of providing an uninterrupted time of plant-development to give plants a chance to complete the physiological processes necessary for survival. These processes include seed-production, seedling-development and the building up of carbohydrate reserves. Resting of veld is also recommended for the building up of food reserves for animals during the dormant season.

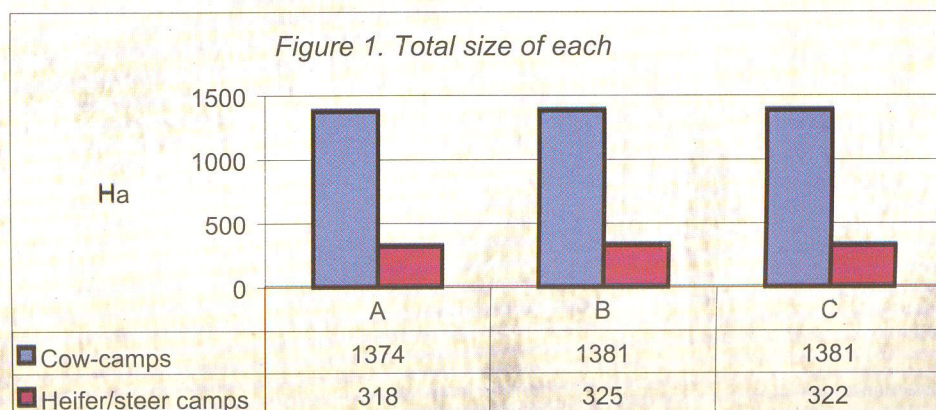
The fodder bank grazing system is based on the assumption that all the fodder needed to support the cattle on a farm for 12 months of a year, under extensive grazing conditions, are mainly produced during the growing season of the year (Smit, 2003). This in fact implies that one third of a farm will produce enough fodder to support the cattle of that farm for one third of the year. If the fodder is not enough, the other two thirds will also not produce enough fodder for the remaining time of the year. It is therefore a kind of an 'early-warning system', providing the farmer with insights into what might be expected in coming seasons when utilising only one third of his farm at a time. The system is also based on the assumptions that grazing of veld during the growing season, followed by two growing seasons of rest, will lead to veld recovery and that grazing during the dormant seasons of the year will not lead to veld degradation.

The main principles of this system therefore are based on dividing the farm into three parts of equal potential (Smit, 2003), dividing the year into three grazing seasons, taking care that enough veld is rested for a full growing season and adjusting animal numbers according to the potential of the veld.

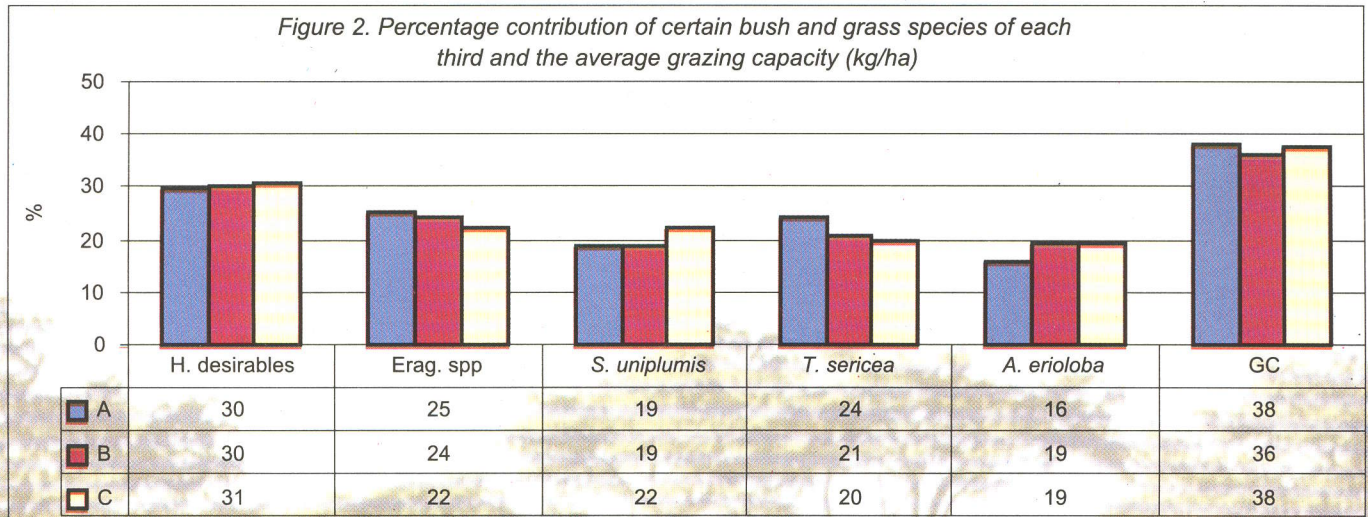
IMPLEMENTATION AT SANDVELD RESEARCH STATION

Division of camps

At Sandveld Research Station, the camps of the trial that were previously stocked at a stocking rate of 25, 35 and 45 kg/ha, respectively, were chosen. The average grazing capacity of these camps from data from 1998 to 2002, camp sizes, veld types and species composition were used to divide these camps into thirds of equal potential. Each third consists of 12 cow-camps and 6 heifer/steer camps. The sizes of each third are displayed in Figure 1.



The percentage contribution of the main bush- and grass species, according to surveys done in 2003, is displayed in Figure 2. Grass species presented in Figure 2 are the a) H. desirables group and constitute the highly desirable grass species (*Antheophora pubescens*, *Brachiaria nigropedata*, *Digitaria seriata* and *Schmidtia pappophoroides*), b) all *Eragrostis* species that were recorded in the surveys are in the Erag. spp group and c) *Stipagrostis uniplumis*. Bush species presented are *Terminalia sericea* and *Acacia erioloba*. GC stands for the average grazing capacity of these camps from 1998 to 2002.



Grazing management

Each year is divided into three seasons. These seasons consist of a 5-month growing season (January to May) and two dormant seasons of 4 months (June to September) and 3 months (October - December) respectively. When animals graze third A during the growing season, the other two thirds will not be used and will receive a full growing season's rest. Animals will be moved to third B after five months and again to third C after four months. This implies that when a third is grazed during the growing season (January to May), it will receive a 16 months rest before it will be used again (Table 1).

Table 1. Grazing seasons of three consecutive years

Third A	Third B	Third C
1) January 2004 - May 2004 5 months use	5 months rest	16 months rest
16 months rest	2) June 2004 - September 2004 4 months use	
	5 months rest	3 months rest
3 months rest		4) January 2005 - May 2005 5 months use
	5 months rest	16 months rest
3 months rest		
6) October 2005 - December 2005 3 months use	5 months rest	7) January 2006 - May 2006 5 months use
8) June 2006 - September 2006 4 months use		4 months rest
3 months rest	9) October 2006 - December 2006 3 months use	16 months rest

Cattle will be rotated between the camps within each third to ensure grazing to the same intensity of all camps. The system, however, leaves room for adjustments throughout the year. When fodder in one third is not enough for the animals, the other two thirds might be used for 'spare fodder'. This early warning must however be taken note of and cattle numbers must be altered according to the capacity of the veld. Alternatively, when ample grazing is left at the end of a grazing season, it will give an indication of understocking and the necessary steps might be taken. Surveys will therefore be done at the beginning of each grazing season in the third that will be grazed. Stocking rates will be adjusted, when necessary, according to these surveys.

Implementation of the adjustments of the trial started in 2004 and Farmers Days will be held to keep interested farmers informed as the project progresses.

References: Smit, G.N. 2003. Fodderflow program and the implementation of rest periods in a rotational grazing system. Unpublished. Presented at the Information day, Sandveld Research Station, Namibia, November 2003.

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