STEPS IN THE COMPILATION OF A grazing management system

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STEP 1

The first step in the development of a grazing system is to determine the long-term carrying capacity of the farm and to decide on a stocking rate that is equal to that.

For example, if a 1000ha farm has a carrying capacity of 2 ha/LSU, then that farm can be stocked with 500 LSU's (1000 ha ÷ 2 ha/LSU = 500 LSU's). Stocking rates in excess of the farm's inherent carrying capacity will necessarily result in animals being chronically malnourished, with associated poor animal performance. A farm's carrying capacity is not a constant but varies from year to year as the rainfall varies and with a change in the condition of the grazing resource.

There are four grazing concepts to keep in mind when conducting the above calculation.

The first two concepts are grazing capacity and carrying

capacity. Grazing capacity refers to the ability of a relatively homogeneous unit of vegetation (i.e. a camp or land) to feed a specific number of animals for 365 days. Firstly, let us assume that one hectare of land in a specific camp (say Vlei Camp) has the potential to produce 3650 kg of edible fodder per year. Let us also assume that an animal, for example, a beef cow, needs 10 kg of fodder per day, then its total fodder requirement is 3650 kg of fodder per year. Vlei camp thus has a grazing capacity equal to 1 ha/animal, as it produces enough fodder on one hectare to feed one animal for one year. If another camp (say Berg Camp) produces only half the amount of fodder a cow requires per year, then Berg camp has a grazing capacity equal to 2ha/animal, and so forth. Thus, each grazing resource (camp or land) on the farm has its own grazing capacity.

Carrying capacity, on the other hand, refers to the combined ability of all the grazing resources on a specific farm to feed animals for a year. For example, a farm may consist of a mixture of veld (which includes wetlands, ridges, and meadows) and planted pastures. The number of livestock that the farm can thus carry depends on the combined grazing capacity of each of the different grazing resources and that is then referred to as the carrying capacity of the farm.

The second group of grazing concepts are stocking density and stocking rate. Stocking rate refers to the total number of animal units that the farmer keeps on his farm. For example, if the farmer keeps 100 animals on his farm of 1000ha, he applies a stocking rate of 1 animal per 10ha. Stocking density, on the other hand, refers to the number of animals that the farmer runs at a given stage together in one herd on a given area of the farm. For example, if the farmer in the above example runs his 100 head of cattle as one herd in a single camp of 100ha, then he applies a stocking density of 10 animals per hectare in that camp for the duration of the grazing period, but the stocking rate on the farm is still 1 animal per 10 hectares. These two terms are often used as synonyms, which is wrong and causes unnecessary confusion. Whenever a farmer tells you that he doubled his animal numbers, make sure whether he refers to stocking rate or density. To protect the grazing resources on the farm from deterioration, the stocking rate applied must not exceed the carrying capacity.

STEP 2

The second step is to establish the ideal combination of livestock types for the property.

This is determined by the specific composition and suitability of the different grazing resources for different

livestock species. For example, if a farm's forage resources are not suitable for sheep, it would be unwise to farm with sheep. If the farm is suitable for 50% sheep and 50% beef cattle, the ideal ratio will be 50% sheep and 50% beef cattle. A slight deviation from this ratio is allowed if the relative profitability of the livestock mix dictates it, for example, 60% sheep and 40% beef cattle or vice versa.

STEP 3

Establish the best production system for each livestock type kept on the farm.

For example, if the farm consists of less than 50% veld suitable for calving, it would be unwise to farm with cows only (a cow/calve system only). This may necessitate the inclusion of a component of steers and/or oxen into the production system. The wrong production system for a specific combination of resources seldom leads to maximum profitability.

STEP 4

Decide on a grazing system which is beneficial to both animal performance (and profitability) and the long-term health of the resource base.

This is, in essence, the plan of how the available grazing will be rationed amongst the livestock to provide them with the best possible quality and quantity of forage. This is where, for example, grazing density is considered as one of the grazing tools to achieve this.

No grazing system will ever succeed if it is only good for the resource but leads to such poor animal performance means that profits are low, or no profit is generated or vice versa. A good grazing system will strive to provide the best possible forage when the herd needs it most.

In the case of beef cattle there are four stages in a cow's production year when it is imperative that she (and her follower herd-like calves and replacement heifers) should receive good grazing, namely:

- Late pregnancy - the better a cow's condition at calving, the better her udder development, milk production as well as re-conception rate.
- Early lactation – specifically the first two months of lactation, up until mating starts. Cows that receive sub-optimal grazing during this period quickly lose body condition, which in turn leads to reduced and delayed re-conception and sub-optimal calf growth.
- Mid- to late lactation – this is the period when the cow's milk production decreases rapidly and the calf must start to graze strongly. His biggest competition for forage during this time is especially from the cows in the herd.
- After Weaning. The calves are now fully dependent on itself and good grazing is essential, especially for the replacement heifers that need to grow out.

The grazing system must thus ensure that the available grazing is rationed in such a manner that the herd receives enough good quality forage during each one of the critical production stages.

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