

## Beef Production Systems and Management – A. Skenjana

Beef production systems are classified according to the age at which animals emanating from a production unit are sold. The production unit could be a farm or one of the enterprises in a larger undertaking. A full description of a system includes the age, mass and carcass class at which animals are marketed, as well as the breeding, management and feeding practices followed.

In South Africa the most common beef production systems are

- Weaner production
  - A weaner system is therefore the cow herd run on one farm and the progeny are moved elsewhere for further processing
  - Minimum camps are required for management of animal groups
  - Sales start early after weaning compared to other systems
  - **Reproductive rate is crucial**
- Steer production (2 year old or more ox) systems.
  - A weaner system is therefore the cow herd run on one farm and the progeny is kept for further processing on farm
  - Requires more camps and land for managing animal groups
  - Reproductive rate is less crucial compared to then weaner system
- Buying-in systems (speculative)
  - Animals are bought, kept for a time during which they are usually fed to gain mass or condition, and then sold.



Weaner production systems are basic to beef production *i.e.* are the "engine room" of beef production.

### Production functions

- Nutrition
- Breeding
- Animal health
- Marketing

These are linked-up by management for the system to function as decision need to be taken. NB

### Nutrition

Natural grazing lands constitute the main feed resource for domestic livestock in South Africa, especially beef cattle. This is the cheapest form of feed. Feed costs for livestock production ranges at 70-75 % of the total input costs.

For optimum beef production while retaining veld stability, farmers need to study and understand the veld (natural grazing lands) in conjunction with their livestock. The nutrient requirements of an animal are two-fold, *i.e.*, maintenance requirements and production requirements. Production is only realized after the maintenance requirements are met. This means that the priority for an animal is survival and then production and reproduction.

## Veld

Knowledge of the veld condition is important for a farmer as it the main source of feed for the animals under grazing conditions. To be informed of the situation on the farm or production unit, an investigation of plants which includes the grasses animals graze as well as the trees and bushes that are browsed must be done. This will provide basis for planning of the farming enterprise.

In South Africa, season of growth is expressed as sweet-, mixed- and sourveld. Sweetveld is veld which remains palatable and nutritious when mature while Sourveld provides palatable material only in the growing season.

Mixed-veld is intermediate between these two extremes, and varies from sweet-mixed (9 to 11 months grazing per year) to sour-mixed (6 to 8 months grazing per year). Usually, the distinction between sweet- and sour-veld is reasonably clear.

## Sourveld

The first limiting factor for beef production in the sourveld areas is overwintering. The protein content of grasses is low and the lignin content is high.

Resultant: loose of condtion

A number of strategies are followed to prevent winter live mass losses, including:

- conserved feeds, usually hay or silage, are fed in winter
- crop residues are grazed or processed for winter feeding
- winter fodder crops are established which can be grazed or foggaged for winter feed
  
- Supplementary feeding is practised *i.e.* winter licks are provided.

Plan for the winter or suffer the consequence of expensive feed or poor reconception.

For successful beef farming in the sour-veld, the primary objective is to make summers as long as possible by using the correct grazing management, including applying the correct stocking rate.

**Supplementary feeding with licks has proved to the cheapest if grass material is available**

## Breeding

**Animal type is crucial for the production system to be followed**

**Early maturing types** start depositing fat at an earlier age and can be market ready at a live mass of 380 to 400 kg.

**Late maturing types** can reach market readiness at a live mass of 500kg or more.

**Medium maturing types** reach the market readiness earlier than late maturing type

As a general rule, dual purpose breeds are late maturing types with high growth rates and require a longer feeding period.

The British beef breeds, excluding the Sussex which is medium to late maturing, are generally early maturing and although their growth rates are relatively lower, they need a shorter feeding period to reach a good carcass finish.

Indicus cattle can do well in feedlots, but temperament and problems with laminitis can occur.

### **Breed of animal**

Choice of beef breed should be the decision of a farmer based on the production system to be followed

### **Breeding management**

This involves a series of activities starting with the breeding policy, through selection of breeding animals, replacement animals for breeding, decision on the breeding season up to the calving season. The policy on breeding could be based on strict culling of non-producing animals and cows that fail to rear a healthy calf up to weaning. The best breeding season for any farm is the time that will allow the animals to calve when there is good quality grazing for the lactating cows and young growing calves. This will provide a good foundation for your weaner calf targeted for the feedlot and the calf targeted for replacement.

## **Animal Health**

Vaccination is crucial as they say "Prevention is better than curing". A proper herd health and vaccination programme is necessary for any beef production system

## **Marketing**

Marketing is another essential for a beef farming enterprise to be effective.

**Marketing channels:** most beef farmers sell live animals:

1. Out of hand
2. At a farmer's association auction
3. An auction held privately
4. To a feedlot or through a custom feedlot
5. For slaughter at an abattoir - either directly or after on-farm fattening (feedlot or pasture or veld finishing).

### **Marketing cull cows**

*Categories of cull cows*

1. Cull heifers.
2. Empty cows that have lost their calves.
3. Empty cows that did not reconceive.
4. Old cows.
5. Cows that must be culled because of injury.

*Major options*

1. Sell soon after weaning (May)
2. Hold and fatten for sale later
3. Overwinter cheaply and fatten on veld next summer

Herd composition of weaner, tolly and ox beef production systems each comprising 100 breeding cows, expressed as animal units (AU).

Sub-class	Weaner		Tolly		Ox	
	AU	% of total herd AU	AU	% of total herd AU	AU	% of total Herd AU
Bulls	4.8	2.9	4.8	2.5	4.8	1.9
Dry cows	22.8	63.1	22.8	54.6	22.8	42.7
Lactating cows	66.4		66.4		66.4	
First calf cows	16.8		16.8		16.8	
Calves	18.5	11.0	18.5	9.5	18.5	7.4
Rpl heifers (yearling)	15.1	23.0	15.1	20.0	15.1	15.6
Rpl heifers (two-year old)	18.6		18.6		18.6	
Rpl heifers (point of calf)	5.0		5.0		5.0	
Heifers (yearling)			8.9	13.4	17.9	21.1
Steers (yearling)			17.1		34.4	
Heifers (two-year old)					9.6	11.3
Steers (two-year old)					18.4	
Total AU	168		194		248.3	