

## 2.6 Selection of animals

Animals can be classified according to their disease status:

- \* Diseased buffalo behind the red line (dirty buffalo) may have any of the following diseases: corridor, foot-and-mouth, brucellosis and tuberculosis.
- \* Disease-free buffalo (clean buffalo) must be free of corridor, foot-and-mouth disease, brucellosis and tuberculosis. They are also referred to as Addo buffalo.
- \* Diseased breeding buffalo (behind the red line) must be free of tuberculosis and brucellosis. These animals must be kept in quarantine while in the breeding project.

Buffalo can be obtained from the following sources:

- \* Game farms - diseased and disease-free buffalo.
- \* Game auctions - disease-free buffalo.
- \* Capture operators - these can be diseased or disease-free animals. The prospective buyer must ensure that tests are done to certify the animals clean of diseases like foot-and-mouth, corridor, tuberculosis and brucellosis.

**Always buy from reliable dealers because there is no cheap alternative. Select for good quality breeding stock with the emphasis on trophy quality.**

## 2.7 Selection of breeding stock

### 2.7.1 Selection of bulls

This information is based on the selection of buffalo bulls by C & K buffalo breeders (see section 2.15). The first stage is to select animals that are free of tuberculosis and brucellosis. Three criteria are used to select the bulls:

- \* Horn length  
Research has shown that 8% of buffalo bulls in a population have good quality horns. The ideal horn type is one with a boss with a diameter of more than 16 inches (400 mm), a deep curve with tips pointing backwards and a 44 inches (1100 mm) wide spread. In the past hunters selected these bulls for their trophies. The characteristics described above disappeared from "clean" Addo buffalo populations as a result of hunting pressure in the past and is leading to a demand for "stud bulls" of trophy value from the breeding industry.
- \* Temperament  
During the selection process only 20% of bulls showed a good temperament. This is a very important factor to consider when buffalo are kept under intensive farming conditions. Aggressive bulls can cause injuries to other breeding animals and to staff in the facilities.

\* Semen quality



Bulls of C & K breeders were selected for semen quality. Samples were taken when the bulls were immobilised by means of electro-ejaculation. Guidelines to be followed when selecting bulls for breeding purposes:

Scrotal circumference	-	>400 mm
Semen colour	-	whitish
Consistency	-	thick milky
Sperm count	-	$>400 \times 10^6/\text{ml}$
Morphology	-	>80% normal



The more characteristics a breeder selects for, the slower is the genetic progress. Genetic progress can be calculated with the following formula:

$$\text{Genetic progress} = 1 / n$$

Where n is the number of selection criteria (e.g. 3 in discussion above)

The progress described above is:  $1 / 3 = 0.58$ .

### **2.7.2 Selection of buffalo cows**

Only two criteria are used. First, the animals must be certified free of brucellosis and tuberculosis. The second criterium is fertility. The buffalo are captured during spring (September to October) while they are late pregnant, but the calves of the previous year are already weaned.

### **2.7.3 Selection of Jersey cows**

Jersey cows can be used as surrogate mothers, after the buffalo calf drank colostrum for the first 48 hours from the buffalo cow, to ensure good immunity against diseases under natural conditions. The calves are then strong enough to suckle from a foster mother. This practise also reduces the chance of infection from the buffalo cow to her calf (foot-and-mouth and corridor disease). Cattle serve as sentinels (biological disease detectors). The buffalo calf imprints on the Jersey cow and their social behaviour does not change. When the buffalo calf is removed from the buffalo cow, it shortens the inter-calving period because there is no lactation anestrus.



The following factors must be considered when selecting Jersey cows:

- \* Use animals with long teats. The buffalo calf suckles from the back and when the lower incisors cut, it will cut a short tear at the base of the udder. These wounds will be enlarged in areas where oxpeckers are present.
- \* Jersey cows with a history of mastitis are not recommended. This is to prevent calves getting diarrhoea.
- \* To avoid cows getting mastitis in the calf-raising facility do not use cows with a peak milk production of higher than 25 l/day.
- \* Select cows from herds with a tuberculosis and brucellosis free history. Test the cows before they are introduced to the facility.
- \* Cows with a black colour have more difficulty to adapt to hot conditions in the Lowveld. However, pigmentation is important to avoid skin and eye cancers.
- \* Select animals that are second calvers. They are not as nervous as heifers because they have been handled in the milking parlour. Avoid kickers in the stable.
- \* The protocol for dipping and vaccination can be discussed with the local veterinarian, because it differs from one area to another. Guidelines for a protocol are given in Table 7.
- \* Cows must not be vaccinated against foot-and-mouth disease and brucellosis.
- \* Select animals with a high butterfat production, because the milk of the buffalo cows have a butterfat percentage of 6--8.

**TABLE 7** Vaccination and dipping protocol

DISEASE	JERSEY COWS	BUFFALO COWS
Anthrax	+	+
Botulism	+	+
Blackquarter	+	+
Lumpy skin	+	+
Rift Valley	+	+
<b>DIPPING</b> (alternate with Pyrethroids and Formamidines)	Weekly	Weekly during 6 weeks before calving