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## **Beef cattle production farms — Good production practices**



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This Draft Uganda Standard, DUS DARS 1108: 2018, *Beef cattle production farms — Good production practices*, is identical with and has been reproduced from a Draft African Standard, DARS 1108: 2018, *Beef cattle production farms — Good production practices*, and adopted as a Uganda Standard.

The committee responsible for this document is Technical Committee UNBS/TC 213, *Live animals, meat and meat products*.

Wherever the words, "African Standard" appear, they should be replaced by "Uganda Standard".

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## Table of contents

1	Scope.....	1
2	Normative references.....	1
3	Terms and definitions.....	1
4	Animal environment: Protection from extreme weather .....	2
5	Feed and water .....	3
5.1	Nutrition and feed management .....	3
5.2	Requirements .....	4
5.3	Recommended practices .....	4
6	Water .....	4
6.1	Requirements .....	5
6.2	Recommended practices .....	5
7	Animal health .....	5
7.1	Herd health management.....	5
7.2	Recommended practices .....	5
8	Lameness .....	6
8.1	Requirements .....	7
8.2	Recommended practices .....	7
9	Animal husbandry.....	7
9.1	Handling and moving cattle.....	7
9.2	Requirements .....	7
9.3	Recommended practices .....	7
10	Transportation.....	8
10.1	General.....	8
10.2	Requirements .....	8
	Bibliography.....	9
	Acknowledgment and appreciation.....	10

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This African Standard was prepared by the ARSO Technical Harmonization Committee on *Live Animals* (ARSO/TC 23).

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## **Introduction**

The establishment of this standard is important to significantly promote and encourage the quality and safety development of the beef production in order to be accepted for both domestic and international trade. Therefore, it is deemed necessary to establish a standard on Good Agricultural Practice for Beef practices and also applied as criteria to certify the production process at farm level for food safety of the consumers and promoting beef cattle exportation.





## Beef cattle production farms — Good production practices

### 1 Scope

This draft African standard specifies the good animal practices for production of quality, safety and sustainability of beef cattle which must be met throughout the supply chain from birth or sourcing to slaughter/ intended for human consumption.

### 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

*Terrestrial Animal Health Code (OIE TAHE)*, World Organization for Animal Health (WOAH)

### 3 Terms and definitions

For the purposes of this standard, the following terms and definitions shall apply.

#### 3.1

##### **coulees**

term applied to different landforms, all of which refer to a kind of valley or drainage zone with a cool climate condition

#### 3.2

##### **treed** (of an area)

planted with trees

#### 3.3

##### **Body Condition Scoring (BCS)**

management tool to estimate body weight and body fat reserves using a numeric score system. condition of the animal as poor, lean, fat, moderate, fit, and good

#### 3.4

##### **stray (tingle) voltage**

occurrence of electrical potential between two objects that ideally should not have any voltage difference between them

#### 3.5

##### **animal welfare**

the physical and mental state of an animal in relation to the conditions in which it lives and dies

**NOTE** An animal is in a good state of welfare if it is healthy, comfortable, well nourished, safe, able to express innate behaviour, and if it is not suffering from unpleasant states such as pain, fear and distress.

#### 3.6

##### **euthanasia**

act of inducing death using a method that causes a rapid and irreversible loss of consciousness with minimum pain and distress to the animal to relieve pain and suffering from incurable disease or injury

#### 3.7

##### **reportable disease**

disease considered to be of great public health importance

## 3.8

### **commingling**

to cause to blend together; mix

## **4 Animal environment**

**4.1.1** Beef cattle are housed in a variety of ways depending on age, size, and reproductive state. Systems may include range conditions, fields, corrals or yards, indoor pens or stalls. Treed areas or geographical features (such as coulees) can provide shelter from wind and sun.

**4.1.2** Animals' ability to cope with sudden changes in weather or adverse weather events varies with many factors such as:

- (i) age (especially new-born calves);
- (ii) body condition score;
- (iii) access to feed, water and shelter;
- (iv) degree of acclimation (for example, winter hair coat);
- (v) health status; and
- (vi) stress (such as newly-arrived feedlot cattle).

### **4.1.3 High temperature and humidity**

Cattle are generally able to tolerate low temperatures better than high temperatures. Humidity levels and ventilation affect an animal's ability to cope with heat stress. Extreme heat is generally more stressful to cattle early in the summer season before they have had a chance to acclimate to the increased temperatures.

Signs of heat stress in cattle include:

- (i) open-mouth panting with tongue protruding;
- (ii) laboured breathing;
- (iii) drooling or froth around the mouth; and
- (iv) sunken eyes.

Cattle are at risk of heat stress when combined temperature and humidity exceed a Humidex value of 40. However, factors such as shade, air movement and length of exposure all influence the impact of high Humidex values on cattle.

Heat stress can lead to reductions in feed intake, weight gain, reproductive efficiency and milk production. Severe heat stress may result in illness and death. Water requirements are greater during hot weather.

When cattle are showing signs of heat stress an emergency action plan that give the following recommended practices should be considered:

- (i) priority access to additional water;
- (ii) provision of shade;
- (iii) provision of cooling systems like fans or as appropriate for the local conditions; and

- (iv) reduction of cattle density; and

When cattle are showing signs of cold stress the following recommended practices should be considered;

- i) provide cattle with shelter
- ii) provide cattle adequate feed and water.

Unnecessary movement of cattle shall be avoided to prevent heat stress.

#### **4.1.4 Lighting**

**4.1.4.1** Housed cattle that doesn't have sufficient access to natural light should be provided with supplementary light which following the natural periodicity sufficient for their health and welfare, to facilitate natural behaviour patterns and to allow adequate and safe inspection of the cattle.

**4.1.4.2** The lighting should not cause discomfort to the cattle

**4.1.4.3** Entrance and exist from restraint facilities and their surrounding area should be well lit

**4.1.5 Air quality:** proper ventilation is important for effective heat dissipation in cattle and to prevent build- up of effluent gases e.g.(ammonia and hydrogen sulphide) (the ammonia level in enclosed housing should not exceed 25 ppm )

**4.1.6 Noise:** cattle are adaptable to different types and levels of noise, sudden and unexpected noises should be minimized to prevent stress and fear reactions.

**4.1.7 Flooring, bedding resting surfaces and outdoor areas:** In all production systems cattle need a well - drained and comfortable place to rest, all cattle in a group should have sufficient space to lie down and rest

Pens should be thoroughly cleaned and provided with dry bedding, dust free and free from parasites and disease agents in order to ensure good hygiene, comfort and minimize risk of diseases and injuries.

Floor should be designed to minimize slipping and falling, promote foot health and reduce the risk of claw injuries

**4.1.8 Location:** The impact of climate and geographical factors on cattle production farms should be taken into consideration when farms are established

## **5 Feed and water**

### **5.1 Nutrition and feed management**

Cattle need to be monitored on an ongoing basis and feed resources shall be well-managed and readily available according to the animals' changing needs and environmental conditions. Cattle that are not fed adequately will lose body condition, will not perform to their capacity, and are more likely to have reduced immune function (10 - 12). Signs that cattle are not able to access sufficient feed or water include increased vocalizing, roaming, and breaking through fences aggressively.

Body Condition Scoring (BCS) is an important tool for determining if an animal is too thin (BCS of less than 2 out of 5), too fat (BCS greater than 4 out of 5), or in ideal condition. Ideal body condition scores will vary depending upon stage of production (see Table 1). BCS also allows producers to optimize the utilization of feed resources and animal productivity. Be aware that body condition scores are most applicable to mature cattle and may be of little use for cattle under one year of age. Note that the cause of poor body condition is not always nutritional.

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Feeding space required depends on type of feed, feeding frequency, amount of feed, presence of horned cattle, animal size, and group size. Increased animal density in the pen increases competition among cattle for access to feed, water and resting areas. Reduced space per animal at the feed bunk also increases competitive interactions among cattle, reduces bunk attendance times, and increases the time spent waiting for access to feed. This might not cause problems for dominant cattle, but it does directly affect subordinate animals, and can result in uneven feed intakes and reduced growth.

**Table 1 — Body Condition Score (BCS) targets for beef cattle**

Stage of production	Target BCS (out of 5)
30 days before start of breeding	2.5 - Cows 3.0 - Heifers 3.0 - 3.5 - Bulls
Start of dry season feeding program	3.0 - All females 3.0 - 3.5 - Bulls
Calving	2.5 - Mature cows 3.0 - Bred and first-calf heifers
Flushing/flush feeding act of super-ovulation	Feeding care a month pre-delivery for health scenarios of the dam and calf

### 5.2 Requirements

Monitor cattle behaviour, performance, body condition score and health on an ongoing basis and adjust the feeding program accordingly.

Ensure cattle have access to feed of adequate quality and quantity to fulfil their nutritional needs at all times, and maintain proper body condition, taking into account factors such as: age, frame size, reproductive status, physiological status and health status, level of production, competition and weather.

Take prompt corrective action to ensure the body condition score of cattle is within a score of 2.5 – 5.

Take steps to prevent exposure of cattle to toxins (such as lead batteries, fertilizer, treated seed, antifreeze, nitrates) and to avoid feed with adverse physical qualities that could cause injury or limit intake.

### 5.3 Recommended practices

- Test nutrient content of feed ingredients used and balance rations as necessary. Consult a nutritionist for advice.
- Become familiar with potential micronutrient deficiencies or excesses in your geographic area and use appropriately-formulated supplements.
- Manage feedstuffs in a way to maintain quality and minimize spoilage and. avoid sudden or extreme ration changes.
- Provide a less competitive feeding environment for sick, injured, weak or convalescing cattle. Where space is adequate, it is recommended to isolate this group of animals from the healthy ones.
- Cattle handlers should understand the impact of Cattle size and age, sudden dietary changes should not be allowed and should follow the feeding program to avoid negative results as dispatched abomasum, sub-acute ruminal acidosis, bloating, liver abscess and laminitis

## 6 Water

Cattle need access to water of adequate quality and quantity to fulfil their physiological needs. Water availability and quality are extremely important for cattle health and productivity. Beef cattle will drink

10 % of their body weight. Water quality affects water consumption. Cattle may limit their water intake to the point of dehydration if the quality of drinking water is compromised.

## **6.1 Requirements**

Ensure that cattle have access to portable water of adequate quality and quantity to fulfil their physiological needs. Monitor water sources, feeding habits, behaviour, performance and health on an ongoing basis and be prepared to adjust the watering program accordingly.

Have a back-up water source in the event of interruption in water supply.

## **6.2 Recommended practices**

- a) Ensure that water sources are easy for cattle to locate and access.
- b) Manage cattle and water sources to avoid competition that would limit access to water.
- c) Check automated water sources daily to ensure they are dispensing properly.
- d) Test water quality in the event of problems such as poor performance, reluctance to drink, or reduced feed consumption.
- e) If utilizing natural water sources, provide water in troughs or bowls wherever possible to ensure cleanliness of water supply and safe animal access.
- f) Be aware of the signs of stray (tingle) voltage around water sources, such as reluctance to drink or reduced feed consumption.

# **7 Animal health**

## **7.1 Herd health management**

Good animal health optimises animal welfare. Diseases cause pain and discomfort and impact negatively on animal welfare. Herd health management and bio-security protocols can help prevent diseases. Producers need to be able to promptly recognize and treat animal health issues in order to optimize animal welfare.

Veterinarians play a key role in helping producers meet these animal health obligations. Although the specific regulations vary among countries, in order for veterinarians to prescribe some classes of medications and vaccines. The veterinarians shall be registered in their respective countries.

An effective Herd Health Management Program contributes to cattle well-being by providing a strategy for disease prevention, rapid diagnosis and effective treatment.

## **7.2 Recommended practices**

Maintain accurate animal management and health records.

### **7.2.1 Sick, injured and cull cattle**

More frequent monitoring of cattle may be necessary during weather that may compromise animal welfare, calving and post-weaning periods, and when multiple stressors occur simultaneously (for example, weaning, transportation, commingling, etc.). Adequate monitoring ensures timely detection and treatment of sick or injured cattle. Treatment may vary from therapeutic interventions to convalescent care. Some examples of convalescent care may include (but are not limited to): segregation, easier access to feed and water, reduced competition and increased monitoring.

Be aware that cattle may hide their expression of pain or suffering, and that this may affect your assessment of their condition in making decisions about treatment or euthanasia.

## DARS 1108:2018(E)

Cattle owners, veterinarians, and laboratories are required to immediately report an animal that is infected or suspected of being infected with a reportable disease to the authorities.

### 7.2.2 Health conditions related to feedlot cattle

Feedlots are a site where cattle are frequently commingled. At certain times of the year, there is an increased risk of the transmission of disease due to multiple stressors, such as weaning and transportation. Feedlot managers need to be proactive in the prevention, early detection and treatment of illness.

### 7.2.3 Managing risk of bovine respiratory disease

Bovine Respiratory Disease (BRD) is a leading cause of sickness and mortality in the beef feedlot industry. Feedlot operators take a variety of management steps, including daily monitoring, to minimize the risk of BRD.

Some risk factors for bovine respiratory diseases are:

- a) non-vaccinated cattle;
- b) recent weaning;
- c) transportation and handling;
- d) sudden or extreme changes in weather;
- e) commingling of cattle from various sources; and
- f) dusty and suffocated barns.

Early detection and prompt treatment decrease chronicity and mortality due to BRD and other diseases.

#### 7.2.3.1 Requirements

Monitor the behaviour of newly-arrived feedlot cattle to facilitate the early detection of illness.

Have a disease prevention strategy for new arrivals into a feedlot.

#### 7.2.3.2 Recommended practices

- a) Categorize newly-arrived cattle according to risk for BRD and other illness and apply appropriate receiving protocols.
- b) Whenever possible, buy calves of known source, vaccination history, and health status.

**7.2.4** For parasitic burdens e.g.(endoparasites, ectoparasites and protozoa),a program should be implemented to monitor, control and treat as appropriate

**7.2.5** Emergency plans should cover the management of the farm in face of an emergency disease outbreak, consistently with national program and recommendations of veterinary services as appropriate

## 8 Lameness

There are multiple causes of lameness in cattle, including injury, nutrition and infection such as Foot and Mouth Disease (FMD). An increased incidence of footrot is often associated with chronic wet conditions and rocky surfaces. A common cause of infectious arthritis is the bacterium *Mycoplasma bovis* which is also associated with bovine respiratory disease. Therefore, preventive measures for bovine respiratory disease may also help to reduce lameness caused by arthritis. Lameness due to injury can

be reduced through good facility design and low-stress handling techniques, both of which help reduce slips and falls.

### **8.1 Requirements**

Provide appropriate care, convalescence or treatment for lame cattle without delay. Monitor the animals' response to therapy or care and, if the initial treatment protocol fails, then re-assess treatment options or seek veterinary advice.

Promptly cull or euthanize lame cattle that have a poor prognosis for recovery, or that do not respond to therapy or care.

### **8.2 Recommended practices**

- a) Manage pen conditions to minimize mud and standing water.
- b) Work with your veterinarian to identify and resolve sudden increases in the incidence of lameness.

## **9 Animal husbandry**

### **9.1 Handling and moving cattle**

There is less risk of injury to both animals and handlers when cattle are handled quietly and calmly. Experienced handlers who are aware of cattle behaviour, including herd instinct, flight zone and point of balance, reaction to wind, noise, sudden movements, light contrast or shadows etc. will be able to move cattle more smoothly. This will minimize stress and promote cattle welfare.

### **9.2 Requirements**

- a) Animal handlers shall be familiar with cattle behaviour (through training, experience or mentorship) and use quiet handling techniques.
- b) Electric prods shall only be used to assist movement of cattle when animal or human safety is at risk or as a last resort when all other humane alternatives have failed and only when cattle have a clear path to move.
- c) Do not use electric prods repeatedly on the same animal.
- d) Do not use electric prods on the genitals, face, udder or anal areas.
- e) Do not use electric prods on calves less than three months of age that can be moved manually. Wilful mistreatment or intentional harm of cattle is unacceptable. This includes but is not limited to beating an animal; slamming gates on animals; allowing herd dogs to continue pushing cattle with nowhere to move; dragging or pushing cattle with machinery (unless to protect animal or human safety).

### **9.3 Recommended practices**

- a) Adjust your handling techniques and positioning according to the response of the animals and the situation.
- b) Take a course in cattle handling techniques.
- c) Use handling tools, such as flags, plastic paddles or rattles, to direct animal movement.
- d) Evaluate your cattle handling techniques regularly, and make improvements to them as needed.

Factors to consider include the percentage of cattle:



- (i) falling (belly or torso touches the ground) during handling;
- (ii) stumbling or tripping (knee contacts ground) after being released from the chute;
- (iii) requiring the use of electric prods to move;
- (iv) running or jumping when leaving the chute; and
- (v) vocalizing as a result of restraint.

Increasing levels of the above handling events may indicate a need for changes in lighting, noise levels, equipment, handling methods, or environment.

## **10 Transportation**

### **10.1 General**

- a) Each person involved in various stages of cattle transportation has a role in ensuring that the transportation process (including loading, transport and unloading) does not cause injury, undue suffering, or death of the animals.
- b) If you are responsible for transporting cattle, or arranging for cattle to be transported, you shall follow the most current national animal transport requirements.
- c) The scope of the beef Good Agricultural Practice ends at the farm gate, but includes requirements and considerations that affect the transportation process.

### **10.2 Requirements**

The following requirements shall be observed:

- a) unfit cattle shall not be transported unless for veterinary diagnosis or treatment under the advice of a veterinarian;
- b) compromised animals may only be transported with special provisions and directly to their final destination;
- c) cattle shall receive feed and water within five hours prior to loading if transport will exceed 24 hours;
- d) cows or heifers that are likely to give birth during the journey shall not be transported, unless for veterinary diagnosis or treatment; and
- e) ensure that any loading and unloading equipment, chutes or conveyances are free of hazards in order to minimize the risk of injury.
- f) Plan journey thoroughly and keep the duration to a minimum ;
- g) Provide sufficient floor space and height allowance ;
- h) Air transportation should follow the requirements of IATA organization
- i) Imported cattle should be accompanied with official health certificate from the competent authority in country of origin signed by an official veterinarian authority stating the requirements of the importing country according to the importing pre-agreement.

## **Bibliography**

ISO 34700, *Animal welfare management — General requirements and guidance for organizations in the food supply chain*

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