DUS DARS 1853

DRAFT UGANDA STANDARD

First Edition
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Code of practice on handling and care of dairy cattle

Reference number
DUS DARS 1853: 2023

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The Executive Director
Uganda National Bureau of Standards
P.O. Box 6329
Kampala
Uganda
Tel: +256 417 333 250/1/2
Fax: +256 414 286 123
E-mail: info@unbs.go.ug
Web: www.unbs.go.ug

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This Draft Uganda Standard, DUS DARS 1853: 2023, *Code of practice on handling and care of dairy cattle*, is identical with and has been reproduced from a Draft African Standard, DARS 1853: 2023, *Code of practice on handling and care of dairy cattle*, 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".

DRAFT AFRICAN STANDARD

DARS 1853

First Edition 2023

Code of Practice on Handling and Care Of Dairy Cattle

Reference No. DARS 1853:2023(E)
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Foreword

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This African Standard was prepared by ARSO TC 23, Live Animals

ARSO Central Secretariat
International House 3rd Floor
P. O. Box 57363 — 00200 City Square
NAIROBI, KENYA

Tel. +254-20-2224561, +254-20-3311641, +254-20-3311608

E-mail: arso@arso-oran.org
Web: www.arso-oran.org

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ARSO Central Secretariat
International House 3rd Floor
P.O. Box 57363 — 00200 City Square
NAIROBI, KENYA

Tel: +254-20-2224561, +254-20-3311641, +254-20-3311608

E-mail: arso@arso-oran.org
Web: www.arso-oran.org

Introduction

Animal handling should always be done gently and with good attention. This will reduce accidents and injuries during travel in addition to unnecessary stress affecting their well-being and productivity. Knowing that cattle are animals that live in groups and fear isolation.

This Code aims to establish a system of handling and care of dairy cattle herds with current best practices in dairy herd management on traditional and modern farms in Africa. We indicate in which circumstances the handling and care of animals is important to optimize production while ensuring the safety of the animals and their well-being.

It should be noted that in this Code, the word bovine refers to and applies to dairy cattle of all types and ages including male calves and bulls present on the farm or dairy operation.

The handling and care of animals should consider relevant aspects of safety, animal health and the environment, in order to minimize the physical and behavioural risk for the animal and the farmer.

Code of Practice on Handling and Care Of Dairy Cattle

1 Scope

This draft African code specifies the recommended best practices for husbandry, care and handling of diary cattle to ensure the safety, quality, suitability of milk and milk products which should be produced from healthy animals using management practices that are sustainable from an animal welfare, social, economic and environmental perspective to protect consumers health and facilitate trade.

To achieve this objective the following good practices should be applied; animal health, nutrition (Feed and Water), animal welfare, environment, milking hygiene and socio-economic management

2 Normative references

There are no normative documents to this standard.

3 Terms and definitions

For the purposes of this code, the following terms and definitions shall apply;

3.1
code of practice
set of written rules which explains how people working in a particular profession should behave

3.2
handling dairy cattle
action of the handler or the process by which the animal is handled on a dairy cattle farm

3.3
care dairy cattle
caring or looking after dairy cattle

3.4
flight zone
distance from an animal that a handler must maintain for the animal to feel comfortable

3.5
herd
number of animals of one kind kept together under human control. A herd is usually regarded as an epidemiological unit

3.6
animal handler
person with the knowledge of the behaviour and the needs of the animals that has the appropriate experience and professional expertise to achieve effect management and good animal welfare

4 Handling and Requirements

4.1 Good facilities and handling equipment for dairy cattle are:

a) use suggested props to move the animals forward, such as signs and flags;
b) understand the notions of field of vision, escape zone (private space) and point of balance (shoulder) for moving cattle;
c) provide adequate lighting;
d) move the animals with a slow step;

e) ensure that floor surfaces provide good grip;
f) avoid making loud noises to frighten animals or drive them forward;
g) have frequent contact with cattle and remain calm while handling them;
h) use properly designed and maintained restraints;
i) avoid wringing the tails, especially in calves.

4.2 In addition to good installation of the handling, it is also necessary to know how to handle the animals taking into account the three bases: the person who handles, the equipment to be handled and the animal:

a) The person should be mentally and physically capable. Anyone handling cattle must be able to use the handling equipment and other safety equipment provided; be aware of the risks associated with handling cattle; be able to work calmly with cattle, with a minimum of shouting, impatience or unnecessary force; be in good health and properly trained in safe work practices.

b) Equipment available : All operations handling livestock should have appropriate handling facilities that are well maintained and in good working order.

c) Fences and hedges are not sufficient and will lead to less efficient handling and risk of injury. An animal should never be worked on that is not restrained except by fencing, or is otherwise free to roam as it pleases; Special equipment is needed to handle cattle outside their enclosure.

d) The animal : Most cattle handled will be familiar with the process, dairy cattle, for example, are normally handled daily. Make sure heifers new to the dairy herd can get used to it before their first milking.

e) It is essential to mention the importance of the notion of "flight zone" which refers to the distance at which you can approach the cattle before they start to move. The escape zone may be 5 meters or less for regularly handled dairy cattle. If you enter the escape area of cattle, it will start moving. The closer you get, the faster they move away.

4.3 Handling Facilities, Accommodation and Housing

In dairy cows and in all stages of their life, animals must be housed in conditions that promote their safety, ease of movement and optimal production while remaining in good condition, namely: good feed and a better general atmosphere in the farm.

The housing system concerns all the details of the barn or shelters that protect the animal from the vagaries of the external environment, especially heat and sunshine and/or cold. Among these details we mention:

a) the design of the building or stalls, their orientation and exposure to the sun and prevailing winds;
b) the design of the feeding system in racks and yokes;
c) location of drinkers;
d) fluidity of movement;
e) animal density;
f) the type of soil or litter;
g) stress, lighting and air quality plans;
h) flooring, bedding and resting surfaces;
i) Out door areas;
j) Waste disposal management plan
k) Calving pens;
l) Emergency plan;

m) milking parlor design

4.4 Handling of feed

Minimize competition around drinkers and feeders;

Good practices for animal handling are:

a) Animal feed and its ingredients should be of satisfactory quality to meet the nutritional needs of animals. They should be stored in such a way as to reduce contamination and deterioration as much as possible;
b) Particular attention should be paid to nutrition in the last three month of gestation with particular attention to thee last month, including energy balance, bulk feed and micronutrients to minimize illnesses that may occur during and after calving and to avoid a decline in physical condition.
c) feed and feed ingredients should be tested for the presence of substances that would adversely impact on animal health
d) dairy producers should be familiar with potential micronutrients deficiencies or excesses for production systems and use appropriately formulated supplements where necessary

4.5 Handling for Lactation

The choice of barn design and facilities for dairy cows is important, especially the milking parlour, which has a direct impact on the degree of cow comfort. Cow behaviour and health status can be used to assess animal comfort levels.

Recommended best practices for lactating cows are:

a) provide handling facilities designed to facilitate herding and animal handling;

b) ensure that access routes to the milking parlor are safe and well lit, so cattle can see where they are walking;

c) avoid rocky and wet ground to limit the wear of the claws and certain diseases of lameness;

d) provide soft, grippy floor surfaces where cattle stand for long periods of time;

e) detect wounds, wear and marks of friction on the coat and the whole body of the animals. These indicators could inform us about the existence of gaps in the installations such as sharp and unrounded railings.

4.6 Handling for Batches

4.6.1 For the notion of groupings, it is recommended designing the facilities in such a way as to facilitate movement in batches with the following best practices:

4.6.2 housing and enclosures must be equipped with adequate feeders, drinkers, resting places and devices for personal care;

4.6.3 for detention systems, it must be checked whether the subdivision of the space so that the beds, cubicles, rest areas, corridors and stalls and feeding areas respect the fixed minimum dimensions;

monitor cows housed in groups to avoid competition and aggressive behavior;

i. keep parks well lit and properly ventilated, but free of drafts;

ii. minimize competition around the feeders, the recommended width or free space at the feeders is 65 cm to 78 cm per animal;

iii. Corridors with opportunities for crossing animals must have a dimension of at least 180 cm;

iv. Fire and other emergency precautions;

v. Identification system for cattle such as ear tagging.

4.7 Milk Handling and Hygiene

Milking in dairy cows is an important step for milk production. This milk must be harvested and stored under hygienic conditions for better quality.

Good practices in milk production:

a) Regular milking for cows
b) ensure that milking is carried out under hygienic conditions;

c) ensure milking routines by handling milking machine utensils do not injure animals or introduce contaminants into the milk;

d) ensure milk is handled correctly after milking by:

e) confirm that the milk is cooled or delivered for processing within the prescribed time,The goal is to cool milk to below 4 ºC within 30 minutes after completion of milking;

f) confirm that the milk storage area is clean and tidy;

g) confirm that milk storage equipment is adequate to maintain milk at the recommended temperature;

h) and confirm that milk storage equipment is cleaned and, if necessary, disinfected after each milk collection.

5 Care and Requirements

5.1 Veterinary Care and Herd Health Management Programs

Animal health is a determining factor for productivity and animal welfare. Producers should maintain the good health of their animals by providing them with a balanced diet and appropriate facilities and by implementing a disease prevention, detection and treatment program.

Veterinarians should play a key role in helping farmers meet their animal health obligations.

An effective herd health management plan will help keep herd productive by providing a strategy for disease prevention, early diagnosis and timely treatment.

Recommended best practices for animal care are:

work in consultation with the veterinarian to draw up a herd health management plan and a biosecurity program which designates the set of measures aimed at maintaining a certain health status in a herd and preventing the entry or spread of infectious agents;

a) the herd health management plan should include the following components:

b) maintaining records of animal identification and health care and treatment records;

c) vaccination plans;

d) protocols for the prevention, detection and treatment of diseases and certain animal accidents or injuries, such as lameness;

e) a protocol for observing animals to detect injuries and signs of disease;

f) protocols for controlling pests and insect pests;

g) quarantine with the ability to isolate new arrivals to the herd.

5.2 Movement of Animals

Dairy cows on large farms are constantly on the move to the milking parlour, these movements should however be limited with a fixed and regular circuit to minimize stress.

The animal allotment system depends on several criteria, namely: the size of the farm, the type of grouping, the availability of separations or enclosures, and even the available workforce.

The number of cows in a lot often corresponds to the capacity of the milking parlor and the holding area. The number of cows in a pen is often a multiple of the number of cows admitted in a batch to the milking parlour.

5.3 Mastitis

It is detrimental to recommend a strategic prophylactic program for a dairy herd without adequate information. It is necessary to distinguish between mastitis and the source of contamination in order to know how to treat them. Somatic cells and clinical mastitis are an indicator of udder health, for this, it is necessary to evaluate udder infections by the concentration of somatic cells in the milk in the tank after milking and to know the frequency of cows with clinical and pathology mastitis.
mastitis can be detected at an early stage (subclinical) before the symptoms appear, through California Mastitis test (CMT) it's a quick testing can be performed on small milk sample.

A mastitis prevention program for a herd should be developed based on knowledge of the most common mastitis, milk quality objectives, facility design, existing management practices, environmental conditions and the availability of workforce.

An approach to improve the mammary health of animals and the quality of milk must be implemented in collaboration with the veterinary services, the objectives to be achieved according to African Standard for raw milk are necessarily the following:

The total flora of raw milk is quantified for the evaluation of the health quality of raw milk, thus the maximum level of contamination authorized for the use of milk in human food should be less than $3x10^5$ cfu/ml for milk of cow in milk tank;
The presence of known pathogenic microorganisms in milk such as Salmonella spp., *Listeria monocytogenes*, *Campylobacter jejuni*, *Yersinia enterocolitica* and *Escherichia coli*, at a certain threshold should be avoided ;

In the context of the farm, measures to control mastitis as well as a program to reduce the spread from infected animals must be put in place.

Recommended best practices for good management of mastitis are:

a) consult the attending veterinarian to develop a program for the diagnosis, monitoring and control of mastitis;

b) prevent contagious mastitis by setting up a surveillance system based on the count of somatic cells in each cow;

c) Prevent mastitis from the external environment by:

i. cleaning and drying the teats before and after milking;

ii. putting clean bedding regularly and using sufficient quantities to keep cows in a clean, dry and comfortable environment;

iii. keeping main and cross aisles free of manure and mud;

iv. holding all calvings in a clean, dry pen;

v. culling cows with incurable mastitis.

5.5 State of Health at Calving

A few weeks before and after calving, optimal management of the dry cow at the end of gestation or in preparation for calving is essential for the future dairy cow.

In this period and in addition to the state of stress, the fetus grows in the uterus of the cow and takes up space in volume and weight with an increase in nutritional needs, which limits the ingestion of food. In this situation, the feed must be of good quality, especially forage.

Primiparous cows must be supervised at the time of calving which could be difficult.

Recommended best practices for calving supervision are:

a) move the cows to the special pen before the start of calving;

b) ensure that cows receive the assistance required in the event of a difficult calving;

c) monitor cows at regular intervals as calving approaches;

d) provide feed, water and shelter from the weather to cows that are unable to get up due to difficult calving or milk fever. These cows must be lying on a litter or on a comfortable surface.

5.6 Health Status of Calves

New borns should take their share of colostrum in the first hours of birth, because in most species of mammals, the ingestion of colostrum is essential for the survival and development of the new born.

New borns should be separated from their mothers soon after birth in managed lots.

Recommended best practices for calf health are:

a) monitor calves closely for signs of illness;

b) put the calves in special boxes in a sheltered and warm place and move on to weaning gradually;

c) monitor the calf's body temperature for two weeks after birth.

5.7 Culled or Injured Animals

In each operation, a program for managing the health of injured or aged herds must be put in place. This makes it possible to identify in time the animals which have a visible problem such as injuries or a behavioral problem such as the lameness of the cows, to this we add those intended for culling to

provide them with special treatment and to follow the evolution of their conditions. . These animals are preferably isolated in a separate lot to facilitate their management.

In this health management program for herds injured or intended for culling, could be added quarantine animals in the event of contagious diseases recognized by the WOAH and animals newly arrived on the farm (purchase for example).

Recommended best practices for the health management program for injured or culled animals are:

a) have covered, separate enclosures with plenty of bedding for sick and injured animals;

b) consult the herd veterinarian to determine the treatment to be administered;

c) monitor sick, injured or recovering animals at least twice a day;

d) identify the intervention thresholds for sending animals to cull in particular, know how to determine when to cull the animal;

e) keep records of all treatments and identify treated animals correctly;

f) separate milk from animals under treatment;

g) Changes in body weight, condition and milk yield, morbidity and mortality rates should be observed and recorded.

5.8 Manure Management and Cleanliness

On a farm, the accumulation of manure with excessive humidity could induce diseases such as mastitis. For this, it is recommended to clean regularly and avoid stagnation of urine and water. A hygiene management plan must be put in place for a good state of cleanliness for the animals.

Recommended best practices for manure management and general cleanliness are:

a) bedding material such as straw, sand or other suitable material should be used to maintain the sanitary conditions of the facilities frequented by the animals

b) Over-crowding of animals should be avoided

c) regularly scrape or hose down surfaces in high traffic areas and walkways such as milking parlours;

d) clean individual cubicles after each milking

5.9 Pest and insect control

Pests can transmit diseases and affect animal comfort. Pest and insect control is one aspect of a dairy herd health program.

Recommended best practices for controlling pests and insect include protocols to monitor pest populations and eliminate them, including rats and other rodents, mites, ticks, flies, mosquitoes, and all other pests, harmful insects, even skunks and birds.

6.0 Identification and Iron Marking

Ear tags, ear notches, tattooing, branding and radio frequency identification devices (RFID) are the preferred permanent identification methods used in dairy cattle for welfare reasons. The least invasive approach should be adopted regardless of the method chosen (minimum number of tags per ear, minimum notch). This operation must be carried out quickly, by an experienced operator and using suitable equipment.

Recommended best practices for good traceability, all animals should be identified using a national or regional identification system, failing which farm-level identification is required

Recommended best practices for animal identification are:

a) rely on the national identification system for dairy cattle as the main means of identifying animals;

b) apply the identification tool (ear tag, tattoo among others) taking care not to inflict pain or distress and to avoid traumatic experiences;

c) branding should be avoided unless necessary;

d) use appropriate buckles and other non-toxic products such as paint;

e) use collars or straps with a good fit and the right material.

6.1 Breeding Practice

6.1.1 Genetic selection

Individual animals within a breed should be selected to propagate offspring that exhibit traits beneficial to animal welfare and health by promoting robustness and longevity

6.1.2 Artificial Insemination

Semen collection and Artificial insemination should be carried out by a trained staff in a manner that does not cause pain or distress to the bull and any teaser animal used during collection

6.1.3 Pregnancy diagnosis

Should be performed by a competent person in a manner that does not cause pain or distress

6.1.4 Embryo transfer

Embryo transfer should be performed under epidural or other anesthesia by a trained operator, preferably a veterinarian or a veterinary paraprofessional

6.2 Feeding and Watering

Recommended best practices for feeding and watering animals are:

a) Ensure the supply of portable water and nutritious feed from sustainable and adequate sources;

b) Ensure that the feed given to dairy animals is suitable for its intended use and will not have a negative impact on the quality or safety of their milk;

c) Preserve water reserves and raw materials for animal feed against chemical contamination and climatic hazards (exposure to full sun and intense cold);

d) Ensure proper storage of animal feed.

To avoid competition and jostling between animals, drinking troughs and feeding boxes should preferably be individual and automatic, failing which, it is detrimental to put them in spacious and covered places sheltered from heat and severe cold.

6.3 Trafficking

Depending on the milking system used, there should be milking protocols suitable for that system; regular milking intervals and above all a constant movement circuit in wide and fluid corridors.

Recommended best practices for milking dairy cows are:

i. Milking, whether manual or mechanical, must be done with calm and respect to avoid pain and distress. Particular attention must be paid to the hygiene of personnel, udders and milking equipment;

ii. If a milking machine or an automatic milking system is used, this equipment must be used and maintained in such a way as to avoid damage to the teats and udder. Milking machines must be disinfected between and after each milking. The manufacturers of these materials must provide instructions for use taking into account safety and animal welfare;

iii. Particular attention should be paid to first-time dairy cows who need to be familiar with the milking parlour;

iv. Too long waiting times before and after milking can lead to health and welfare problems (eg lameness and reduced time spent feeding). The conduct of operations must ensure that waiting times are kept to a minimum.

6.4 Hoof Trimming

For animals that remain on the farm, the hooves should not grow to the point of impeding the animals' movement, so they should be trimmed to prevent complications such as lameness and inflammation of the feet between the hooves;

Hoof trimming with proper equipment should be done regularly once or twice a year;

Recommended best practices for hoof trimming dairy cows are:

a) trim hooves of cows about two (2) months before calving;

b) use trained people to perform hoof trimming;

c) ensure that restraint equipment is safe for personnel and animals.

7 Emergencies and Safety

i. In the event of an emergency, a management protocol must be drawn up for the safety of the animals and the well-being in the event of a crisis (heat wave or intense cold, floods, even epidemics).

ii. Have a plan in place for the rapid evacuation of animals in the event of an emergency (fire or flood). This plan should provide for emergency exit facilities such as corridors and secondary openings.

iii. All staff should be aware of emergency response procedures.

iv. Newly designed or renovated facilities should be constructed in such a way as to facilitate evacuation in the event of an emergency.

v. An effective alarm system should be installed in case of fire or power failure. Fire extinguishers should be provided in all buildings.

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2. OIE Terrestrial Animal Health Code, (TAHC), Volume I , Twenty-eighth edition, 2019 ISBN 978-92-95108-85-1 https://www.woah.org/en/what-we-do/standards/codes -and-manuals/terrestrial-code-online-access/?id=169&L=1&htmfile=title_1.7.htm (and specifically section 7 dedicated to animal welfare)

