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## Hay as animal feed — Part 1: Rhodes and natural grass hay — Specification

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## National foreword

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- (a) a member of International Organisation for Standardisation (ISO),
- (b) a contact point for the WHO/FAO Codex Alimentarius Commission on Food Standards, and
- (c) the National Enquiry Point on TBT Agreement of the World Trade Organisation (WTO).

The work of preparing Uganda Standards is carried out through Technical Committees. A Technical Committee is established to deliberate on standards in a given field or area and consists of representatives of consumers, traders, academicians, manufacturers, government and other stakeholders.

Draft Uganda Standards adopted by the Technical Committee are widely circulated to stakeholders and the general public for comments. The committee reviews the comments before recommending the draft standards for approval and declaration as Uganda Standards by the National Standards Council.

This Draft Uganda Standard, DUS DARS 1825-1: 2023, *Hay as animal feed — Part 1: Rhodes and natural grass hay — Specification*, is identical with and has been reproduced from an African Standard, DARS 1825-1: 2023, *Hay as animal feed — Part 1: Rhodes and natural grass hay — Specification*, and adopted as a Uganda Standard.

The committee responsible for this document is Technical Committee UNBS/TC 210, *Animal feeds and feeding stuffs*.

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

DUS DARS 1825 consists of the following parts, under the general title *Hay as animal feed*:

- — *Part 1: Rhodes and natural grass hay — Specification*
- — *Part 2: Alfalfa (Lucerne) hay — Specification*

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**Hay as animal feed**

**Part 1: Rhodes and Natural Grass Hay - Specification**



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*Draft African Standard for comments only — Not to be cited as African Standard*

## Foreword

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This African Standard was prepared by ARSO TC 17 – Animal feeding, feeds and feeding stuffs.

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## Introduction

Rhodes grass (*Chloris gayana*) is an important grass widespread in tropical and subtropical countries. It is drought resistant. One of the most important characteristics of Rhodes grass is its high nutritional quality as animal feed compared to the other grasses.

Harmonizing standards for rhodes and natural grass hay encourage stakeholders in the value chain to adhere to safety and quality standards. This raises the safety and quality characteristics of the produced rhodes grass hay, which promote trade exchange between African countries and facilitates export operations outside Africa, as well as has a positive impact on the quality and safety of animal products.

Therefore, this standard contains the technical requirements on safety and quality of Rhodes and natural grass hay for animal feeding.

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## Hay as animal feed

### Part 1– Rhodes and Natural grass Hay - Specification

#### 1 Scope

This African Standard specifies the requirements and test methods for Rhodes and natural grass hay used as animal feed.

#### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

ARS 56, Pre – packaged foods – Labelling

CODEX STAN 193, Codex general standard for contaminants and toxins in food and feed

ISO 6496, Animal feeding stuffs — Determination of moisture and other volatile matter content

ISO 5983 – 1, Animal feeding stuffs — Determination of nitrogen content and calculation of crude protein content — Part 1: Kjeldahl method

ISO 6865, Animal feeding stuffs — Determination of crude fibre content — Method with intermediate filtration

ISO 5984, Animal feeding stuffs — Determination of crude ash

ISO 6490-1: Animal feeding stuffs — Determination of calcium content — Part 1

ISO 6491: Animal feeding stuffs — Determination of phosphorus content — Spectrometric method

ISO 9831 - Animal feeding stuffs, animal products, and faeces or urine — Determination of gross calorific value — Bomb calorimeter method

ISO 16472 - Animal feeding stuffs — Determination of amylase-treated neutral detergent fibre content (aNDF)

ISO 13906 - Animal feeding stuffs — Determination of acid detergent fibre (ADF) and acid detergent lignin (ADL) contents

ISO 27085 - Animal feeding stuffs — Determination of calcium, sodium, phosphorus, magnesium, potassium, iron, zinc, copper, manganese, cobalt, molybdenum, arsenic, lead and cadmium by ICP-AES

ISO 6497, Animal feeding stuffs — sampling

#### 3 Terms and definitions

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

##### 3.1

##### **grass hay**

grass plants that have been cut, dried, for use as animal feed, particularly for ruminants and equines such as cattle, goats, sheep and horses

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## 3.2

### rhodes grass

grass of the species *gayana* widespread in the tropical and subtropical countries

## 3.3

### natural grass

grass of mixed species, growing in the wild and widespread in the tropical and sub-tropical countries

## 4 Requirements

### 4.1 General requirements

Rhodes and natural grass hay;

- a) shall be presented in form of bales
- b) shall be free from harmful constituents, including weeds, stones, soil, metallic objects poisonous plants and seeds and other adulterants
- c) shall be free from moulds, pathogenic bacteria or insect infestation
- d) shall be free from musty, rancidity or uncharacteristic odour.
- e) shall be free from rain damage
- f) shall be free from plant pests and diseases
- g) shall be free from animal pests and disease causing agent
- h) shall not be infested with parasites that are transmitted to animals and humans

### 4.2 Specific requirements

Rhodes and natural grass hay shall comply with the nutritional requirements specified in Table 1.

**Table 1 - Nutritional requirements for Rhodes and Natural grass hay**

SL No	Parameters	Rhodes grass	Natural Grass	Test Methods
i.	Moisture content, (%), max.	14,0	14,0	ISO 6496
ii.	Metabolizable Energy (Mj/kg), % DM, min.	8,0	7,5	ISO 9831
iii.	Crude protein, % DM, min.	8,0	7,0	ISO 5983 - 1
iv.	Crude Fibre, % DM, max.	35,0	40,0	ISO 6865
v.	Neutral Detergent Fibre (NDF), % DM, max.	70,0	75,0	ISO 16472
vi.	Acid Detergent Fibre (ADF), % DM, max.	40,0	45,0	ISO 13906
vii.	Acid Detergent Lignin (ADL), % DM, max.	7,5	10,0	ISO 13906
viii.	Total ash, % DM, max.	10,0	12,0	ISO 5984
ix.	Calcium, % DM, min.	0,2	0,2	ISO 6490-1
x.	Phosphorous, %DM, min.	0,1	0,1	ISO 6491

## 5 Contaminants

### 5.1 Heavy metals

Rhodes and natural grass hay shall comply with the maximum limits of heavy metals as specified in the Table 2.

**Table 2 - Heavy metal limits for Rhodes and natural grass hay**

S/N	Heavy metals	Maximum limits mg/kg	Test method
i	Arsenic	4,0	ISO 27085
ii	Lead	3,0	
iii	Cadmium	1,0	
iv	Mercury	0,1	

### 5.2 Pesticide residues

Rhodes and natural grass hay shall not exceed the limits established by the Codex Alimentarius Commission on pesticide residues.

### 5.3 Aflatoxins

Total aflatoxin level shall not exceed 20 ppb while aflatoxin B1 shall not exceed 10ppb.

## 6 Packaging and labelling

### 6.1 Packaging

**6.1.1** Rhodes and natural grass hay for sale shall be baled using sufficiently strong twines so as to withstand reasonable handling without tearing, bursting or falling open during normal handling and transportation.

**6.1.2** Rhodes and natural grass hay shall be transported in clean vehicles and the hay should be covered with waterproof material.

### 6.2 Labelling

In addition to the requirements in ARS 56, each package shall be legibly and indelibly marked with the following information:

- a) Type of hay (Rhodes, Natural grass)
- b) Name and the physical address of the producer
- c) Net weight
- d) Batch number
- e) Date of harvest/production
- f) Best before
- g) Instruction for storage
- h) Nutritional information (Energy (ME), Crude protein(CP) and Crude fibre

## 7 Sampling

Sampling shall be done in accordance with ISO 6497.

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