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Hay as animal feed — Part 2: Alfalfa (Lucerne) hay — Specification

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National foreword

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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 1825-2: 2023, *Hay as animal feed — Part 2: Alfalfa (Lucerne) hay — Specification*, is identical with and has been reproduced from an African Standard, DARS 1825-2: 2023, *Hay as animal feed — Part 2: Alfalfa (Lucerne) 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*

Hay as animal feed

Part 2: Alfalfa (Lucerne) hay - Specification



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Table of contents

1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Requirements	2
5	Contaminants	3
6	Packaging and labelling	3
7	Sampling.....	3

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

Foreword

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Introduction

[Alfalfa](#) is among the most important forage crops in the world. Also known as “The Forage Queen,” Alfalfa is green, leafy legume hay that is commonly added to livestock's feed programs to provide additional nutritional benefits. Also, alfalfa is a perennial grass that grows spontaneously in arid and semi-arid regions in Africa. This hay, rich in essential nutrients, makes it an excellent nutritional support in animal feed. Alfalfa contains between 15 % to 22 % crude protein and higher rumen degraded protein (RDP) content than other forages as well as an excellent source of both fat and water soluble vitamins (A, D, E, K) and B (B1, B2, B3 or Niacin, B5 (Pantothenic acid), B6, B8 (Biotin), B9 (Folic acid) and B12) respectively and minerals (Phosphorus, Calcium, Potassium, Sodium, Chlorine, Sulfur, Magnesium, Copper, Manganese, Iron, Cobalt, Boron, and Molybdenum and some trace elements).

Alfalfa is used to feed several animals, including horses, cattle, buffaloes, goats, sheep, and rabbits. Feeding animals with alfalfa hay helps produce better wool, meat, milk, and other products. Harmonizing standards for Alfalfa (Lucerne) hay encourage stakeholders in the value chain to adhere to safety and quality standards. This raises the safety and quality characteristics of the produced alfalfa 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 Alfalfa hay as animal feed.

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Hay as animal feed

Part 2: Alfalfa (Lucerne) hay - Specification

1 Scope

This Draft African Standard specifies the requirements and test methods for alfalfa (lucerne) 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

DARS 1825-2:2023

alfalfa (lucerne) hay

perennial legume of the species sativa that has been cut, dried and baled for use as feed.

4 Requirements

4.1 General requirements

Alfalfa (Alfalfa) 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 for Lucerne (Alfalfa) Hay

Lucerne (Alfalfa) hay shall also comply with the nutritional requirements specified in Table 1.

Table 1 - Nutritional requirements for alfalfa (lucerne) hay

SL No	Parameters	Limits	Test method
1.	Moisture content % (max.)	14,0	ISO 6496
2.	Crude protein, % DM, min.	18,0	ISO 5983 - 1
3.	Crude Fiber, % DM, max.	30,0	ISO 6865
4.	Neutral Detergent Fibre (NDF), % DM, max.	50,0	ISO 16472
5.	Acid Detergent Fibre (ADF), % DM, max.	35,0	ISO 13906
6.	Total ash, % DM, max.	10,0	ISO 5984
7.	Calcium, % DM, min.	0,2	ISO 6490-1
8.	Phosphorous % DM, min.	0,1	ISO 6491

5 Contaminants

5.1 Heavy metals

Lucerne (Alfalfa) hay shall comply with the maximum limits of heavy metals as specified in the Table 2.

Table 2 - Heavy metal limits for alfalfa (lucerne) hay

S/N	Heavy metals	Maximum limit mg/kg	Test method
1.	Arsenic	4,0	ISO 27085
2.	Lead	3,0	
3.	Cadmium	1,0	
4.	Mercury	0,1	

5.2 Pesticide residues

Lucerne (Alfalfa) hay shall not exceed the pesticide residue limits established by the Codex Alimentarius Commission on contaminants.

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 Lucerne (Alfalfa) hay for sale shall be baled using sufficiently strong twines so as to withstand reasonable handling without tearing or falling open during transportation and storage.

6.1.2 Lucerne (Alfalfa) 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;

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

7 Sampling

Sampling shall be done in accordance with ISO 6497.

