DUS DEAS 903

DRAFT UGANDA STANDARD

First Edition
2018-mm-dd

Dairy goat feeds — Specification

Reference number
DUS DEAS 903: 2018

Compliance with this standard does not, of itself confer immunity from legal obligations

A Uganda Standard does not purport to include all necessary provisions of a contract. Users are responsible for its correct application

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National foreword

Uganda National Bureau of Standards (UNBS) is a parastatal under the Ministry of Trade, Industry and Cooperatives established under Cap 327, of the Laws of Uganda, as amended. UNBS is mandated to co-ordinate the elaboration of standards and is

(a) a member of International Organisation for Standardisation (ISO) and

(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 DEAS 903:2018, *Dairy goat feeds — Specification,* is identical with and has been reproduced from a Draft East African Standard, DEAS 903: 2018*, Dairy goat feeds — Specification,* and is being proposed for adoption as a Uganda Standard.

This standard was developed by the Food and agriculture Standards Technical Committee (UNBS/TC 2).

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

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DRAFT EAST AFRICAN STANDARD

Dairy goat feeds — Specification

EAST AFRICAN COMMUNITY

First Edition 2017

Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in East Africa. It is envisaged that through harmonized standardization, trade barriers which are encountered when goods and services are exchanged within the Community will be removed.

In order to meet the above objectives, the EAC Partner States have enacted an East African Standardization, Quality Assurance, Metrology and Test Act, 2006 (EAC SQMT Act, 2006) to make provisions for ensuring standardization, quality assurance, metrology and testing of products produced or originating in a third country and traded in the Community in order to facilitate industrial development and trade as well as helping to protect the health and safety of society and the environment in the Community.

East African Standards are formulated in accordance with the procedures established by the East African Standards Committee. The East African Standards Committee is established under the provisions of Article 4 of the EAC SQMT Act, 2006. The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the private sectors and consumer organizations. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the procedures of the Community.

Article 15(1) of the EAC SQMT Act, 2006 provides that “Within six months of the declaration of an East African Standard, the Partner States shall adopt, without deviation from the approved text of the standard, the East African Standard as a national standard and withdraw any existing national standard with similar scope and purpose”.

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

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Introduction

.To achieve efficient animal production, all nutrients should be provided in amounts necessary to meet the animal's nutritional requirements. The formulation of balanced diets that provide the correct amounts and proportions of these nutrients is essential to support the requirements for maintenance and production. Nutrient requirements become defined accurately through research trials so as to formulate diets more precisely. The standards presented in this document give the restrictions required for the prevention of poor animal performance.

Feeds may be produced by mixing various feeding stuffs or ingredients which may themselves vary in composition. The choice of raw materials mixtures will depend on locality, season and availability, economics, prices, quality and safety of the product. The chemical composition of feedstuffs plays an important role in formulation of balanced and economical rations for various classes of animals. This is only possible when knowledge of the chemical composition of feedstuffs is available. Studies on the nutritive value of feedstuffs available in the East African region show differences between analytical values

Dairy goat feeds — Specification

1 Scope

This Draft East African Standard specifies requirements, methods of sampling and test for dairy goatfeeds.

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.

EAS 97, *Fishmeal — Specification*

EAS 230, *Maize bran as livestock feed — Specification*

EAS 231, *Bone meal for compounding animal feeds — Specification*

EAS 232, *Maize gluten feed — Specification*

EAS 233, *Ostrich feed — Specification*

EAS 287, *Oil-seed cakes for compounding livestock feed — Specification*

EAS 353, *Wheat bran for animal feeds — Specification*

IS0 5510, *Animal feeding stuffs — Determination of available lysine*

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

ISO 5983-2, *Animal feeding stuffs — Determination of nitrogen content and calculation of crude protein content — Part 2: Block digestion/steam distillation method*

ISO 5984, *Animal feeding stuffs — Determination of crude ash*

ISO 5985, *Animal feeding stuffs — Determination of ash insoluble in hydrochloric acid*

ISO 6490-1, *Animal feeding stuffs — Determination of calcium content — Part 1: Titrimetric method*

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

ISO 6492, *Animal feeding stuffs — Determination of fat content*

ISO 6493, *Animal feeding stuffs — Determination of starch content — Polarimetric method*

ISO 6495, *Animal feeding stuffs — Determination of water-soluble chlorides content*

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

ISO 6497, *Animal feeding stuffs — Sampling*

ISO 6498, *Animal feeding stuffs — Preparation of test samples*

ISO 6651, *Animal feeding stuffs — Semi-quantitative determination of aflatoxin B_1 — Thin-layer chromatographic method*

ISO 6654, *Animal feeding stuffs — Determination of urea content*

ISO 6655, *Animal feeding stuffs — Determination of soluble nitrogen content after treatment with pepsin in dilute hydrochloric acid*

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

ISO 6866, *Animal feeding stuffs — Determination of free and total gossypol*

ISO 6869, *Animal feeding stuffs — Determination of the contents of calcium, copper, iron, magnesium, manganese, potassium, sodium and zinc — Method using atomic absorption spectrometry*

ISO 6888-1, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 1: Technique using Baird-Parker agar medium*

ISO 6888-2, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 2: Technique using rabbit plasma fibrinogen agar medium*

ISO 6888-3:2003, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 3: Detection and MPN technique for low numbers*

ISO 7218:1996, *Microbiology of food and animal feeding stuffs — General rules for microbiological examinations*

ISO 7485, *Animal feeding stuffs — Determination of potassium and sodium contents — Methods using flame-emission spectrometry*

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

ISO 11290-1:1996, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of Listeria monocytogenes — Part 1: Detection method*

ISO 11290-2:1996, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of Listeria monocytogenes — Part 2: Enumeration method*

ISO 13903, *Animal feeding stuffs — Determination of amino acids content*

ISO 13904, *Animal feeding stuffs — Determination of tryptophan content*

ISO 14565, *Animal feeding stuffs — Determination of vitamin A content — Method using high-performance liquid chromatography*

ISO 14718, *Animal feeding stuffs — Determination of aflatoxin B_1 content of mixed feeding stuffs — Method using high-performance liquid chromatography*

ISO 14902, *Animal feeding stuffs — Determination of trypsin inhibitor activity of soya products*

ISO 15914, *Animal feeding stuffs — Enzymatic determination of total starch content*

ISO 17375, *Animal feeding stuffs — Determination of aflatoxin B_1*

4 Requirements

4.1 Ingredients for dairy goat feeds

All ingredients and raw materials shall be not decomposed or deteriorated and shall comply with the relevant East Africa standards.

Bone meal, blood meal and meat meal from ruminants shall not be used in dairy goat feeds. Other animal origin ingredients shall be sterilised before use

Vitamin preparations added to feed shall be in a stabilised form.

Where soy bean meal is used, it shall have been subjected to adequate heat treatment to reduce the activity of trypsin inhibitor

4.2 General quality requirements

4.2.1 Dairy goat feeds may be in the form of a meal, cubes or pellets.

4.2.2 Dairy goat feeds shall be free from harmful levels of substances such as metallic objects, and adulterants

4.2.3 Dairy goat feed shall be free from fungi and other, pathogenic microorganisms or insect infestation. in amount that constitute a hazard

4.2.4 Dairy goat feed shall not be musty, rancid and shall not have any objectionable odours.

4.3 Composition of dairy goat feed

4.3.1 The level of free fatty acids in feeds shall not exceed 15 % of the crude fat content at the time of manufacture.

4.3.2 Whole or ground cottonseed shall not comprise more than 8 % of a feed, and no feed shall contain more than 0.02 % gossypol.

4.3.3 Dairy goat feed shall meet the requirements of the nutrients and metabolizable energy in Table 1. Tolerances for the variations that are acceptable in feed formulation are given in Annex A.

Table 1 Nutritional requirements for dairy goat feeds

Nutrient/Characteristics	Growing Kids		Lactating Goats		Bucks		Test Method
	Min	Max	Min	Max	Min	Max	
Moisture content (%)		13		13		13	ISO 6496
Metabolizable energy, MJ/Kg dm	12		11.5		10.5		ISO 9831
Crude Protein (%) Min	12		11		11		ISO 5983-1,
Crude Fat (%)		8		6		6	ISO 6492
Crude Fibre (%)		12		12		12	ISO 6865
Non Protein Nitrogen (%)		Nil		2		2	
Acid Insoluble Ash (%)		4		4		4	ISO 5985
Total Sodium Chloride (%)	0.5	0.6	0.5	0.6	0.5	0.6	ISO 6495
Calcium (%)	0.4		0.4		0.4		ISO 6490-1
Phosphorus (%)	0.2		0.2		0.2		ISO 6491
Vit A IU/Kg	4000		4000		4000		

5 Feed additives and provisions related to their use

5.1 General requirements on additives

All the additives, preservatives etc. used in the feeds shall be only the ones recommended by the OIE.

Additives in the following categories may be used in dairy goat feeds:

a) antioxidants;

b) emulsifiers;

c) stabilisers,

d) thickeners and gelling agents;

e) binders;

f) enzymes

g) anti-caking agents and coagulants; and

h) aromatic and appetising substances;

NOTE Material intended for mixing with animal feed as additives for use as feeding stuff should specify the kind of and, if appropriate the age group of the animal for which the feed is intended. In addition the quantity in grams per kilogram (or percentage by weight) of the complete feed which conform to the provisions of this standard should be stated in the label (see also Clause 7).

No antibiotic, hormone substance, drug or mineral may be added to or included in a feed other than such ingredients required to satisfy this standard and approved by World organization for animal health (OIE)

Where a consignment or a batch of feed or concentrate is prepared specifically for a consumer or group of consumers, substances may be added upon the express written instructions of the consumers provided that

a) such additions are made in accordance with the provisions of the Competent Authority, and

b) the nature and quantities of such additions are clearly stated upon each and every container of the feed or concentrate.

Recommended additives are given in Annex e

when additives given in Annex e are used, they shall comply with limits given in the Annex.

6 Contaminants

6.1 Aflatoxins

Dairy goat feeds shall comply with the maximum aflatoxin limits stated in the table 6.

Table 6 -- Maximum tolerable limits for aflatoxin in dairy goat feeds

S/N	Aflatoxin	Maximum limit (µg/kg)	Test method
1	Total aflatoxin, mkg/	100 for growing kids 300 for dairy goats	ISO 16050
II	Aflatoxin B1, mkg/	5 for dairy goats 10 for growing kids 50 for others	ISO 6651, ISO 14718, ISO 17375

6.2 Pesticide residues

Dairy goats feeds shall comply with those maximum pesticide residue limits established by the Codex Alimentarius Commission for the ingredient used in dairy goat feed

6.3 Heavy metals

Dairy goats feeds shall be free from heavy metals in amounts which may represent a hazard to cattle

Dairy goats feeds shall comply with the maximum limits of heavy metals as specified in the table 7

S/N	Heavy metal	Maximum limit (mg/kg)	Test method
i	Arsenic	2.0	ISO 27085
ii	Lead	5.0	

iii	Cadmium	0.5	
iv	Mercury	0.1	

7 Packaging

GoatDairy goat feeds for sale shall be packaged in containers that are of sufficient strength, and sufficiently sealed so as to withstand reasonable handling without tearing, bursting or falling open. The containers shall be clean and not previously used.

8 Labelling

Each package of dairy goat feed shall be legibly and indelibly labelled with the following:

a) name of the feed for example “growing kid feed”;

a) name and address or contact information of manufacturer

b) declared proportions of crude protein, crude ;fibre, crude fat, phosphorus and calcium,

c) net weight in kilograms

d) directions and precautions for use

e) lot identification;

f) manufacturing date;

g) Storage instruction

h) “Use before” or expiry date.

10 Sampling

Samples shall be drawn in accordance with ISO 6497 and the preparation of test samples shall be in accordance with ISO 6498

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Annex A
(normative)

Tolerance limits on analytical constituents in goat and sheep feeds

Analytical constituents	Limits of variation (% by weight except where otherwise stated)
Ash	If present in excess 2 % for declaration of 10 % or more 20 % for the amount stated for declarations 5 % or more but less than 10 % 1 % for declarations of less than 5 %. If present is deficient 3 % for declaration of 10 % or more 30 % for the amount stated for declarations 5 % or more but less than 10 % 1.5 % for declarations of less than 5 %.
Calcium	If present in excess 3.6 % for declaration of 16 % or more 22.5 % for the amount stated for declarations 12 % or more but less than 16 % 2.7 % for declarations of 6 % or more but less than 12 %. 45 % for the amount stated for declarations 1 % or more but less than 6 % 0.45 % for declarations of less than 1 %. If present is deficiency 1.2 % for declaration of 16 % or more 7.5 % for the amount stated for declarations 12 % or more but less than 16 % 0.9 % for declarations of 6% or more but less than 12 %. 15 % for the amount stated for declarations 1% or more but less than 6 % 0.15 % for declarations less than 1 %.
Cystine	In case of deficiency 20 % of the amount stated
Fibre	If present in excess: 1.8 % for all declarations If deficient: 45 % of the amount stated
Lysine	In case of deficiency 15 % of the amount stated If present in excess 4.5 % for declaration of 1 % or more 30 % of the amount stated for declarations 7.5 % or more but less than 15 % 2.25 % for declarations of 5 % or more but less than 7.5 %. 45 % for the amount stated for declarations 0.75% or more but less than 5 % 0.3 % for declarations of less than 0.7 %.
Methionine	In case of deficiency 15 % of the amount stated If present in excess

Analytical constituents	Limits of variation (% by weight except where otherwise stated)
	1 % for declaration of 10% or more 10 % of the amount stated for declarations 5% or more but less than 10% 0.5 % for declarations of less than 5 %.
Oil	In case of deficiency 1.5 % for declarations of 15 % or more 10 % of the amount for declarations of 8 % or more but less than 15 % If present in excess 3 % for declaration of 15 % or more 20 % of the amount stated for declarations 8 % or more but less than 15 % 0.8 % for declarations less than 8 %
Phosphorus	If present in excess 3.6 % for declaration of 16 % or more 2.25 % of the amount stated for declarations 12 % 45 % of the amount stated for declarations 1 % or more but less than 6 % 0.45 % for declarations of less than 1 %. In case of deficiency 1.2 % for declaration of 16% or more 7.5 % of the amount stated for declarations of 12 % or more but less than 16 % 0.9 % of the amount stated for declarations of 6 % or more but less than 12 % 15 % of the amount stated for declarations of 1 % or more but less than 6 % 0.15 % for declarations 1 % less than 1 %
Sodium	If present in excess 4.5 % for declaration of 15 % or more 30 % of the amount stated for declarations 7.5 % or more but less than 15 % 2.25 % of the amount stated for declarations 5 % or more but less than 7.5 % 0.45 % for declarations of 0.7 % or more but less than 5 %. In case of deficiency 1.5 % for declaration of 15 % or more 10 % of the amount stated for declarations of 7.5 % or more but less than 15 % 0.75 % of the amount stated for declarations of 5 % or more but less than 7.5 % 15 % of the amount stated for declarations of 0.7 % or more but less than 5 % 0.1 % for declarations less than 0.7 %
Starch and total sugar	If present in excess 5 % for declaration of 25% or more 20 % of the amount stated for declarations 10% or more but less than 25% 2 % of the amount stated for declarations less than 10%. In case of deficiency 2.5 % for declaration of 25 % or more 10 % of the amount stated for declarations of 10 % or more but less than 25 %

Analytical constituents	Limits of variation (% by weight except where otherwise stated)
	1 % for declarations less than 1 %
Total sugar expressed as sucrose	If present in excess 4 % for declaration of 20 % or more 20 % of the amount stated for declarations 10 % or more but less than 20 % 2 % of the amount stated for declarations less than 10 %. In case of deficiency 2 % for declaration of 20 % or more 10 % of the amount stated for declarations of 10 % or more but less than 20 % 1 % for declarations less than 10 %
Ash insoluble in hydrochloric acid	If present in excess 10 % for declaration of more than 3 % 0.3 % of the amount stated for declarations of 3 % or less
Carotene	In case of deficiency, 30% of the amount stated
Chlorides expressed as NaCl	If present in excess 10% for declaration of more than 3% 0.3% of the amount stated for declarations of 3% or less
Magnesium	In case of deficiency 1.5% for declaration of 15% or more 10% of the amount stated for declarations of 2% or more but less than 15% 0.2% for declarations less than 2%
Minerals	
Cobalt	± 50% of the amount stated for declarations above 200 mg/kg
Copper	±30 of the amount stated for declarations above 200 mg/kg ±50 of the amount stated for declarations up to an including 200 mg/kg
Iodine	± 50% of the amount stated for declarations of 250 mg/kg or more
Iron	± 50% of the amount stated for declarations less than 250 mg/kg
Manganese	± 50% of the amount stated
Molybdenum	± 50% of the amount stated
Selenium	± 50% of the amount stated
Zinc	± 50% of the amount stated
Vitamins	
Vitamin D2 and D 3	±30 of the amount stated for declarations above 4000 IU/kg ±50 of the amount stated for declarations up to an including 4000 IU/kg
Vitamins other than D2 and D 3	In case of deficiency ± 30% of the amount stated

Annex B
(informative)

Nutrient composition of common feed ingredients

Studies on nutritive value of feedstuffs available in Uganda show differences between analytical values and those which are already tabulated in various feeding standards. Chemical composition of feedstuffs play an important role in formulation of balanced and economical rations for various classes of animals. It is only possible when exact knowledge of chemical composition of feedstuffs are available. This table presents values of some chemical composition of common feedstuffs in Uganda.

Ingredients	DM%	CP%	CF%	Ca%	P%	ME Kcal/kg	Lysine %	Methionine %
Maize	88	8	12	0.17	0.55	3000	0.53	0.29
Maize bran	88	9.4	13	0.04	1.03	2200	0.18	0.21
Maize/cob meal	88	7	8		0.30			
Rice bran	88	13.5	6.5	0.06	1.43	3000	0.5	0.22
Cassava meal	88	2.8	4.0	0.3	0.05	3000	-	-
Molasses	75	3.0		0.75	0.08	2330	-	-
Millet	88	10.5	2.0	0.05	0.40	1392	0.2	0.27
Sorghum	88	9.0	2.1	0.03	0.28	3250	0.2	0.12
Fish meal	88	60.0	1.0	4.37	2.53	2310	4.08	1.70
Blood meal	92	72.9	1.7	0.28	0.22	1177	7.0	0.9
Cotton seed cake	88	40.0	14	0.20	1.20	968	1.6	0.52
Soya bean meal	88	43.0	6	0.53	0.64	2800	2.84	0.65
Limestone	98	-	-	38.0	-	-	-	-
Oyster shells	98	-	-	35.0	-	-	-	-
Wheat pollard	98	15.0					0.60	0.35
Wheat bran	91.4	15.0	12.5		1.20		0.60	0.35
Sunflower cake	92	35.0	26.7				1.80	1.20
Groundnut cake	93	40.0	7.3				2.00	1.80
Rice polishings	92.5	12.0	4.2				4.0	0.40
Bone meal	94	24	1.5					
Dicalcium phosphate				24	18			
Tricalcium phosphate				38	19			
Meat meal		60.0					0.50	1.0
Alfalfa hay	87.5	18.9	33.1					
Sugarcane bagasse	90.5	1.7	50.3					
Sesame cake	93	36.1	6.7					
Sugarcane tops	33.5	6.2	29.5					
Whey	90	13.0	1.3	0.97	0.76	3100		0.2

Annex C
(informative)

Description of common feedstuffs

Product	Description	Main nutritional constituent
1. Alfalfa meal	Alfalfa as grown, dried and processed, and to which no other matter has been added	Crude protein, Crude fibre
2. Barley meal	The meal obtained by grinding barley, as grown, which shall be the whole grain together only with such other substances as may reasonably be expected to have become associated with the grain in the field.	Crude protein, Crude fibre
3. Bean meal	The meal obtained by grinding commercially pure leguminous beans (other than soya bean).	Crude protein, Crude fibre
4. Blood meal	The meal has been dried out to which no other matter has been added	Crude protein, Dry matter
5. Bone meal	Commercially pure steamed bone, raw or degreased, which has been ground or crushed and which contains phosphorus not less than 4.5% phosphorus.	Crude protein, Phosphorus, Calcium
6. Brewery and distillery grains	The product obtained by drying the residue from distillery mash-tube, and to which no other matter has been added	Crude fibre, Crude protein
7. Cassava, dried	The dried root of the species *Manhot esculanta*	Crude fibre, Crude protein
8. Clover meal	Clover as grown, dried and processed and to which no other matter has been added.	Crude protein, Crude fibre
9. Coconut cake	The residue resulting after part removal of oil and of cortex from commercially pure coconut kernels	Crude protein Crude fibre
11. Cotton seed cake	The residue resulting after part removal of oil and of cortex from commercially pure cotton seed	Crude protein, Crude fibre
12. Sorghum meal	The meal obtained by grinding sorghum as grown which shall be the whole grain together only with such substances as may reasonably be expected to have become associated with the grain in the field.	Crude protein, Crude fibre
13. Fish meal	A product, which may contain an added antioxidant but to which no other matter has been added, obtained by drying and grinding or otherwise treating fish or fish waste.	Crude protein, Oil, total ash.
14. Grass, meal	Any product which, (i) Is obtained by artificially drying any of the following: grass, clover, lucerne, green cereal, or any mixture consisting of any of them, and (ii) Is otherwise as grown (that is to say including any growths harvested there with but with no other substance added thereto), and contains not less than 13% crude protein calculated on the assumption that it contain 10% moisture.	Crude protein, Crude fibre
15. Groundnut cake	The residue resulting after part removal of oil and part of non-removal of cortex from commercially pure groundnuts	Crude protein, Oil, crude fibre
16. Maize	Maize kernel or crushed maize kernel as grown for commercial purposes	Crude protein
17. Maize germ meal	Consisting mainly of embryo of kernel not less than 10% oil, and not more than 5% ash	
18. Maize and cob meal	Ground maize on the cob	Crude protein, Oil, crude fibre
19. Maize meal	Milled whole maize	Crude protein, Oil, crude fibre
20: maize gluten meal	A by-product resulting from removal of a bran starch and germ from maize	Crude protein, Oil, crude fibre
21. Meat and bone meal	A product, which may contain an added antioxidant but to which no other matter has been added, containing not less than 65% protein, obtained by drying and grinding animal carcasses of portions thereof but excluding hair, have been preliminarily treated for the removal of fat	Crude protein, Oil, crude fibre
22. Milk powder	Dried milk from which a substantial amount of fat has been removed and to which no other substance is added	Crude protein

23. Millet	Finger millet of the species *Eleusine coracana*	Crude protein, Crude fibre
24. Mineral mixture	Mixture of substances used wither in the form powder or licks and purporting to be essential for livestock	Percent of the mineral and trace elements
25. Molasses	A concentrated syrup product obtained in the manufacture of sugar from sugar cane to which no other matter has been added	Dry matter, sugar as sucrose
26. Oats, ground	The product obtained by grinding commercially pure oats	Crude protein, Crude fibre
27. Pea meal	The meal obtained by grinding or crushing commercially pure peas including pods	Crude protein, Crude fibre
28. Rice bran	The outside husk or rice kernel to which no other matter has been added	Crude protein, Crude fibre, oil
29. Rice meal	The product obtained by grinding commercially pure rice after the removal of hulls and to which no other substance is added	Crude fibre, Crude protein, oil
30. Rice polishings	The product obtained when polishing kernels after the removal of hulls and bran	Crude protein, oil, Crude fibre
31. Sesame cake	The residue resulting after the part removal of oil from commercially pure simsim kernels	Crude protein, oil, Crude fibre
32. Soya bean meal	The residue resulting after the part removal of oil from commercially pure soya bean seeds	Crude protein, oil, Crude fibre
33. Sweet potatoes	The dried tubers of the species *Ipomea batatas*	Crude protein, Crude fibre
34. Wheat meal	The meal obtained by grinding commercially pure wheat as grown and to which no other substance has been added	Crude protein, Crude fibre
35. wheat bran	Outside husk of what kernel to which no other matter was added	Crude protein, Crude fibre
36. Wheat pollard	A by-product of wheat separated during production of flour not mentioned otherwise in this schedule containing not more than 4% of other than wheat vegetable substances	Crude protein, Crude fibre
37. Yeast dried	The product obtained by drying of yeast or yeast residues, and to which no other matter has been added.	Crude protein
38. Other feedstuffs	As may be described by the Department of Animal Resources from time to time	

Annex D
(informative)

Requirements for the feed mill

The building to house the machinery and storage will depend on the particular circumstances of the mill. In general the building must be capable of being kept clean. Provision should be made for keeping the dust level as low as possible since it can affect the operation of the machinery and the health of the workers. The required space for storage of raw materials and feeds determines largely the size of the buildings.

Equipment may be totally enclosed in a light structure. However the machinery can also stand in the open or under a roof only.

A concrete floor which can be swept is a must. The floor should be laid down to the machinery plan as pits and foundations for the machinery are required. The machinery often has its own supports or these may be constructed locally.

A supply of electricity is necessary except for very small milling units. Where is no reliable power supply a standby generating plant will be required.

Water is required only for direct addition and/or raising of steam in pelleting. In some cases water is used to sprinkle raw materials before grinding or during mixing.

Annex E

Requirements for additives used in dairy goat feeds

E.2 Requirements for antioxidants

Dairy goat feed shall contain no added antioxidant other than an antioxidant of a name or description specified in the first column of the table below, where an antioxidant if added should not exceed the maximum content, if any, specified in the second column of the Table 2.

Table 2 — Requirements for antioxidants in goatdairy goat feeds

Name or description	Maximum content in complete feed stuff, mg/kg
L-Ascorbic acid Sodium L-ascorbate Calcium di (L-ascorbate) 5,6-Diacetyl-L-ascorbic acid 6-Palmitoyl-L-ascorbic acid Tocopherol-rich extracts of a natural origin Synthetic alpha-tocopherol Synthetic gamma-tocopherol Synthetic delta-tocopherol	No li mits
Propyl gallate Octyl gallate Dodecyl gallate	100, singly or in combination
Butylated hydroxyanisole (BHA)	150

E.3 Requirements for colourants in dairy goat feed

GoatDairy goat feed shall contain no colorant other than a colorant named or described in Table 3 in accordance with the maximum content specified.

Egg yolk colouring or flavourings designed to improve the palatability of the feed may be included at the manufacturer's discretion.

Table 3 — Requirements for colorants in dairy goat feeds

Name or description	Maximum content in complete feed, mg/kg
Patent Blue V Acid brilliant green BS	No limits

E.4 Requirements for emulsifiers, stabilisers, thickeners and gelling agents

E.4.1 General

GoatDairy goat feed shall contain no added emulsifier, stabiliser, thickener or gelling agent other than an emulsifier, stabiliser, thickener or gelling agent of a name or description, specified hereunder.

E.4.2 Name or description

Lecithins; Alginic acid; Sodium alginate; Potassium alginate; Ammonium alginate Calcium alginate; Prophylene glycol alginate (propane- 1,1-diol alginate) Agar; Carrageenan; Furcellaran; Locust bean gum (carob gum); Tamarind seed flour Gurar gum (gua flour); Tragacanth; Acacia (gum Arabic); Zanthan gum; D-glucitol (sorbitol); mannitol; Glycerol; Pectins; microcrystalline cellulose; Methylcellulose; Ethylcellulose; Hydroxylpropyl cellulose;Hydorxyprophylmethylcellulose; Ethylmethlcellulose; Carboxymethylcellulose;sodium salt; Sodium, potassium and calcium salts or edible fatty acids alone or in mixtures, derived from edible fat or distilled fatty acids Monoacyl and diacylglycerols esterified with the following acids: (a) acetic (b) lactic (c) citric (d) tartaric (e) monoacetylatartaric and (f) diacetyltartaric.

E.4.3 Sucrose esters or fatty acids

The following sucrose esters fatty acids may be added to goatdairy goat feeds:

a) mixture of sucrose esters of monocyl and diacylglycerols (sucroglycerides, polyglycerides);

b) polyglycerol esters of non-polymerised edible fatty acids;

c) propylene glycol esters of fatty acids (propane-1,2-diol esters of fatty acids);

d) stearoyl-2-lactylic acid; sodium stearoyl-1,2-lacylate; calcium stearoyl-1,2-lactylate;

e) stearoyl-1-tartrate; glycerol poly (ethylene glycol) ricinolcate; dextrans; sorbitan monostearate;

f) sorbitan tristearte; sorbitan monolaurate; sorbitan mono-eleate; sorbitan monopalmitate;

g) partial polyglycerol esters of polycondensed fatty acids of castor oil (polyglycerol polyricinoleate) polyoxyethylene (20) sorbitan monolaurate;

h) polyoxyethylene (20) sorbitan monopalmitate, polyoxyethylene (20) sorbitan monostearate;

i) polyoxyethylene (20) sorbitan tristearate, polyoxyethylene (20) sorbitan monocleate;

j) polyoxyethylene (20) sorbitan tricleate, polyoxyethylene (8) sorbitan stearate; and

k) polyoxyethylene (40) stearate.

The emulsifiers, stabilisers, thickeners and gelling agents listed in Table 4 shall conform to the requirement in Table 4.

Table 4 — Requirements for emulsifiers, stabilisers, thickeners and gelling agents in goatdairy goat feeds

Name or description	Kind of animal	Maximum content In complete feed, mg/kg
Poly (ethylene glycol) 6 000	All goatdairy goat	300
Polyoxypropylene-Polyoxyethelene polymers (M.W 6 800-9 000)	All goatdairy goat	50
Propane-1,2-diol	Lambs , kids	36 000

E.5 Requirements for binders, anticaking agents and coagulants

E.5.1 General

GoatDairy goat feed shall contain no added binder, anti-caking agent or coagulant other than a binder, anti-caking agent or coagulant of a name or description specified in 5.5.2.

E.5.2 Name or description

Lignosulphonates; Colloidal silica; Silicic acid, precipitate and dried; Sodium aluminosilicate, Sodium, potassium and calcium stearate; Kaolin and Kaslinitic clays free of asbestos- natural accruing mixtures of minerals containing at least 65% complex hydrated aluminium silicates whose main constituent in Kasolinite; Bentonite and other montmerillonitee clays; Vermiculite-hydrated silicate of magnesium, aluminium and iron; Citric acid; Kieselguhr (diatomaceous earth, purified); Calcium silicate (synthetic); Natural mixtures of steatite and chlorite free of asbestos.

E.6 Requirements for aromatic and appetising substances

GoatDairy goat feed shall contain no added aromatic or appetising substance other than an aromatic or appetising substance of a name or description specified in Table 5 and taking account of any such substance which is naturally present, without exceeding the maximum content specified.

Table 5 — Requirements for aromatic and appetising substances

Name or description	Maximum content in complete feed, mg/kg
Saccharin	No limits
All natural products and corresponding synthetic products	No limits

E.7 Permitted preservatives

GoatDairy goat feed shall contain no added preservatives other than a preservative of a name or description specified hereunder.

a) sorbic acid, sodium sorbate, potassium sorbate, calcium sorbate;

b) folic acid;

c) ammonium formate, sodium formate, calcium formate;

d) acetic acid, potassium acetate, sodium diacetate;

e) latic acid, sodium lactate, potassium lactate, ammonium lactate, calcium lactate;

f) propionic acid, sodium propionate, potassium propionate;

g) L-Tartaric acid;

h) citric acid, sodium citrates, calcium citrates;

i) orthophosphoric acid;

j) fumaric acid;

k) DL-Malic acid; and

l) hydrochloric acid or sulphuric acid for use in silage only.

Bibliography

[1] Ministry of Agriculture Animal Industry and Fisheries, *Animal Feeds Regulatory Services Study — Volume iv: Animal Feeds Standards*