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DRAFT EAST AFRICAN STANDARD

Ostrich feed — Specification

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EAST AFRICAN COMMUNITY

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Foreword

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

The Community has established an East African Standards Committee (EASC) mandated to develop and issue East African Standards (EAS). The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the public and private sector organizations in the community.

East African Standards are developed through Technical Committees that are representative of key stakeholders including government, academia, consumer groups, private sector and other interested parties. 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 Principles and procedures for development of East African Standards.

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.

The committee responsible for this document is Technical Committee EASC/TC 001, *Animal feeds and feeding stuffs*.

Attention is drawn to the possibility that some of the elements of this document may be subject of patent rights. EAC shall not be held responsible for identifying any or all such patent rights.

This second edition cancels and replaces the first edition (EAS 233:2001), which has been technically revised.

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Ostrich feed — Specification

1 Scope

This Draft East African Standard specifies requirements, sampling and test methods for ostrich 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.

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

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

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

ISO 14718, *Animal feeding stuffs — Determination of aflatoxin B1 content of mixed feeding stuffs — Method using high-performance liquid chromatography*

ISO 17375, *Animal feeding stuffs — Determination of aflatoxin B1*

ISO 16050, *Foodstuffs — Determination of aflatoxin B1, and the total content of aflatoxins B1, B2, G1 and G2 in cereals, nuts and derived products — High-performance liquid chromatographic method*

EAS 38, *Labelling of pre-packaged foods — General requirements*

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

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1
pre-starter
age of 0 - 2 weeks

3.2
starter
age 2 of weeks - 2 months

3.3
grower
age of 2 months - 5 months

3.4
finisher
age of 5 months - 12 months

3.5
maintenance
age of 12 months - 24 months

3.6
breeder
age of 24 months and above

4 Requirements

4.1 General requirements

4.1.1 All ingredients and raw materials shall not be decomposed or deteriorated and shall comply with the relevant East Africa Standards. The common feedstuffs described in Annex A and their nutrient composition provided in Annex B may be used for purposes of formulating feeds.

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

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

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

4.1.5 Ostrich feeds shall:

a) be in the form of either a meal or cubes or pellets;

b) be free from harmful levels of substances such as metallic objects, and adulterants;

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c) be free from fungi and other, pathogenic microorganisms or insect infestation in amounts that constitute a hazard; and

d) not be musty, rancid and shall not have any objectionable odours.

4.2 Specific nutrient requirements

Pre- starter, starter, grower, finisher, maintenance and breeder diets shall comply with the requirements specified in Table 1 when tested in accordance with the test methods specified therein.

Table 1 — Specific Nutrient requirements for ostrich feed

Feed	Crude protein	Moisture	Fibre	Fat	Calcium		Phosphorus		Salt	M/E
	min. %	max. %	%	Max. %	min .%	max. %	min. %	max. %	min. %	kcal//kg
Pre-starter	18	12	13.5(max.)	3.0	1	1.6	0.5	1.0	0.2	2988
Starter	17	12	13.5 (max.)	3.0	1	1.6	0.5	1.0	0.2	2749
Grower	15	12	16 (min.)	3.0	0.9	1.6	0.5	1.0	0.2	2510
Finisher	14	12	15.5 (min.)	3.0	0.9	1.5	0.5	1.0	0.2	2199
Maintenance	12	12	15.0 (min.)	3.0	0.8	1.5	0.6	1.0	0.2	1673
Breeder	12	12	16.5 (min.)	3.0	2	3.5	0.5	1.7	0.2	1673
Test method	ISO 5983-1	ISO 6496	ISO 6865	ISO 6492	ISO 6490-1		ISO 6491		EAS 74	ISO 9831

5 Feed additives and provisions related to their use

5.1 Additives in the following categories may be used in ostrichfeed and if used, they shall comply with the requirements given in Annex C.

a) antioxidants;

b) colourants;

c) emulsifiers;

d) stabilisers;

e) thickeners and gelling agents;

f) binders;

g) anti-caking agents and coagulants;

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h) aromatic and appetising substances;

i) enzymes; and

j) preservatives.

NOTE Materials intended for mixing with animal feed as additives for use as feeding stuffs 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/food which conform to the provisions of this standard should be stated in the label (see also Clause 9).

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

6 Upper limits of toxins and anti-nutritional factors

The upper limits of toxins and anti-nutritional factors in ostrich feeds shall conform to the requirements specified in Table 2 when tested in accordance with the test methods specified therein.

Table 2 —Toxins and anti-nutritional factors requirements for feed

Toxins and anti-nutritional factors (max. limits)	Class diets						
	Pre-starter	Starter	Grower	Finisher	Maintenance	Breeder	Test method
Aflatoxins, ppb	5	10	20	20	20	10	ISO 16050
Free gossypol, mg/kg	50	50	50	120	15	120	ISO 6866
Trypsin inhibitor (measured in urease activity), %	5	5	5	5	5	5	ISO 5506

7 Hygiene

Ostrich feed shall be prepared in accordance with CAC/RCP 54.

8 Weights and measures

Ostrich feed shall be weighed according to the weights and measures regulation of the destination country.

9 Packaging

Ostrich feed shall be packaged in suitable containers that are of sufficient strength, and sufficiently sealed to withstand reasonable handling without tearing, bursting or falling open. The containers shall be clean and not previously used.

10 Labelling

In addition to the requirements in EAS 38, each package shall be legibly and indelibly labelled with the following:

a) expiry date;

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b) name of the feed for example “ostrich ”;

c) name and physical address of the manufacturer;

d) additives if included shall be declared;

e) net weight in metric units;

f) directions and precautions for use;

g) batch number /lot identification;

h) manufacturing date; and

i) storage instructions.

11 Sampling

Sampling shall be done in accordance ISO 6497.

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ANNEX A
(normative)

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
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 *Manihot esculenta*	starch
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
10. Cotton seed cake	The residue resulting after part removal of oil and of cortex from commercially pure cotton seed	Crude protein, crude fibre
11. 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, starch
12. 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
13. 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
14. 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

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Product	Description	Main nutritional constituent
15. Maize	Maize kernel or crushed maize kernel as grown for commercial purposes	Crude protein, starch
16. Maize germ meal	Consisting mainly of embryo of kernel not less than 10 % oil, and not more than 5 % ash	Crude protein, starch
17. Maize and cob meal	Ground maize on the cob	Crude protein, oil, crude fibre
18. Maize meal	Milled whole maize	Crude protein, oil, starch
19. Maize gluten meal	A by-product resulting from removal of a bran starch and germ from maize	Crude protein, oil,
20. 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,
21. Milk powder	Dried milk from which a substantial amount of fat has been removed and to which no other substance is added	Crude protein
22. Millet	Finger millet of the species *Eleusine coracana*	Crude protein, orude fibre, starch
23. Mineral mixture	Mixture of substances used whether in the form powder or licks and purporting to be essential for livestock	Percent of the mineral and trace elements
24. Molasses	A concentrated syrup product obtained in the manufacture of sugar from sugar cane to which no other matter has been added	Sugar as sucrose
25. Oats, ground	The product obtained by grinding commercially pure oats	Crude protein, crude fibre
26. Pea meal	The meal obtained by grinding or crushing commercially pure peas including pods	Crude protein, crude fibre
27. Rice bran	The outside husk or rice kernel to which no other matter has been added	Crude protein, crude fibre, oil, starch
28. 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, starch
29. Rice polishings	The product obtained when polishing kernels after the removal of hulls and bran	Crude protein, oil, crude fibre, starch
30. Sesame cake	The residue resulting after the part removal of oil from commercially pure simsim kernels	Crude protein, oil, crude fibre
31. Soya bean meal	The residue resulting after the part removal of oil from commercially pure soya bean seeds	Crude protein, oil, crude fibre
32. Sweet potatoes	The dried tubers of the species *Ipomea batatas*	Crude protein, crude fibre, starch
33. 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, starch
34. wheat bran	Outside husk of what kernel to which no other matter was added	Crude protein, crude fibre, starch
35. 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, starch
36. Yeast dried	The product obtained by drying of yeast or yeast residues, and to which no other matter has been added.	Crude protein

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Annex B
(informative)

Nutrient composition of common feed ingredients

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

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Annex C
(normative)

Recommended additives used in ostrich feeds

C.1 Requirements for antioxidants in ostrich feeds

Ostrich feeds shall contain no added antioxidant other than an antioxidant of a name or description specified in the first column of Table C.1 or any other antioxidant as shall be approved by OIE. Where an antioxidant is added should not exceed the maximum content, if any, specified in the second column of the Table C.1.

Table C.1 — Requirements for antioxidants in ostrich 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	GMP
Propyl gallate Octyl gallate Dodecyl gallate	100, singly or in combination
Butylated hydroxyanisole (BHA)	150

C.2 Requirements for emulsifiers, stabilisers, thickeners and gelling agents

C.2.1 General

Ostrich feeds 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 in D.2.2 and D.2.3 any other emulsifier, stabiliser, thickener or gelling agent as shall be approved by OIE.

C.2.2 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.

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C.2.3 Sucrose esters or fatty acids

C.2.3.1 The following sucrose esters fatty acids may be added to ostrich 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.

C.2.3.2 The emulsifiers, stabilisers, thickeners and gelling agents listed in Table D.2 shall conform to the requirement therein.

Table C.2 — Requirements for emulsifiers, stabilisers, thickeners and gelling agents in ostrich feeds

Name or description	Maximum content in complete feed, mg/kg
Poly (ethylene glycol) 6 000	300
Polyoxypropylene-polyoxyethelene polymer (M.W 6 800 - 9 000)	50
Propane -1-2-diol	12 000
	36 000

C.3 Requirements for binders, anti-caking agents and coagulants

C.3.1 General

Ostrich feeds 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 D.3.2.

C.3.2 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.

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C.4 Requirements for aromatic and appetising substances

Ostrich feeds shall contain no added aromatic or appetising substance other than an aromatic or appetising substance of a name or description specified in Table C.3 and taking account of any such substance which is naturally present, without exceeding the maximum content specified.

Table C.3 — Requirements for aromatic and appetising substances

Name or description	Maximum content in complete feed, mg/kg
Saccharin All natural products and corresponding synthetic products	GMP

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