

**DRAFT UGANDA STANDARD**

Second Edition  
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**Maize bran and pollard as animal feed — Specification**

PUBLIC REVIEW DRAFT

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Reference number  
DUS DEAS 230: 2019

**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**

PUBLIC REVIEW DRAFT

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## National foreword

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- (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 230: 2019, *Maize bran and pollard as animal feed — Specification*, is identical with and has been reproduced from an East African Standard, DEAS 230: 2019, *Maize bran and pollard as animal feed — Specification*, and is being proposed for adoption as a Uganda Standard.

The committee responsible for this document is Technical Committee UNBS/TC 2, *Food and agriculture*, Subcommittee SC 9, *Animal feeds and feeding stuffs*.

This second edition cancels and replaces the first edition (US EAS 230:2001), which has been technically revised.

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



DEAS 230:2019

ICS 65.120

## DRAFT EAST AFRICAN STANDARD

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Maize bran and pollard as animal feed — Specification

**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 230:2001), which has been technically revised.

PUBLIC REVIEW DRAFT 2019

# Maize bran and pollard as animal feed — Specification

## 1 Scope

This Draft East African Standard specifies requirements, sampling and test methods for maize bran and pollard as an 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.

ISO 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*

### 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  
maize bran**  
product of the flourmills and is the coarse portion that is separated on hulling of the crushed maize grain, to yield fine flour, and is largely composed of the seed coat

**3.2  
extraneous matter**  
organic or inorganic materials other than maize bran and pollard, such as sand, stones, chaff, dead insects and others

### 4 Requirements

#### 4.1 General requirements

4.1.1 Maize bran and pollard shall be from maize grain conforming to EAS 2.

4.1.2 Maize bran shall:

- a) be free from insects, fungal contamination, rodent and insect infestation and other extraneous matter.
- b) be free from objectionable odour
- c) be

#### 4.2 Specific requirements

Maize bran shall comply with the requirements specified in Table 1 when tested in accordance with the test methods specified therein.

**Table 1 — specific requirements for maize bran**

Tanzania: Revise the values for Crude protein from .6 to 12 % to align with international standards

Characteristic	Requirement	Test method
Metabolic energy min, kcal/kg	2200	
Moisture, %, max.	12.0	ISO 6496
Crude protein, %, min	6.0	LAB ISO 5983-1
Crude fibre, %, max.	12.0	ISO 6865

FFA (of crude oil), %, max.	20.0	
Crude oil, %, max.	8.0	
Ash (total), %, max.	2.5.0	ISO 5984
Acid insoluble ash % max.	0.4	ISO 5985I
NOTE 1 FFA is Free Fatty Acids		
NOTE 2 All values obtained are calculated from specimen on dry matter basis, except for those dealing with moisture.		

## 5 Feed additives (annex the table)

Antioxidants and binders may be used in the maize bran and shall conform to specific requirements given in annex A.

## 6 Contaminants

### 6.1 Aflatoxin

Aflatoxin contamination shall not be more than 10 ppb for B<sub>1</sub> and 20 ppb for total aflatoxin.

### 6.2 Pesticide residues

Maize bran and pollard shall comply with the maximum limits for pesticide residues stated in Codex Alimentarius Commission.

### 6.3 Heavy metal

Maize bran and pollard shall be free from heavy metals in amounts which may represent a hazard to animals and shall comply with the maximum limits of heavy metals specified in Table 3 when tested in accordance with the test methods specified therein.

**Table 3 — Limits for heavy metals in maize bran and pollard**

S/No	Heavy metal	Maximum limit, mg/kg	Test method
i	Arsenic	2.0	ISO 27085
ii	Lead	5.0	
iii	Cadmium	1.0	

## 7 Hygiene

Maize bran and pollard shall be prepared in accordance with CAC/RCP 54.

## 8 Weights and measures

Maize bran and pollard shall be weighed according to the weights and measures regulation of the destination country.

## 9 Packaging

Maize bran 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 US EAS 38, each package shall be legibly and indelibly labelled with the following:

- a) expiry date;
- b) name of the feed for example "Maize bran";
- c) name and physical address of the manufacturer;
- d) declared proportions of crude protein, crude fibre, crude fat, total ash phosphorus, calcium lysine and methionine;
- e) additives if included shall be declared;
- f) net weight in metric units;
- g) directions and precautions for use;
- h) batch number /lot identification;
- i) manufacturing date; and
- j) storage instructions.

## 11 Sampling

Sampling shall be done in accordance ISO 6497.

## Annex A (normative)

### Recommended additives used in maize bran and pollard

#### A.1 Requirements for antioxidants

Maize bran and pollard shall contain no added antioxidant other than an antioxidant of a name or description specified in the first column of the table below or any other antioxidant as shall be approved by OIE, where an antioxidant if added should not exceed the maximum content, if any, specified in the second column of the Table A.1.

**Table A.1 — Requirements for antioxidants**

Name or description	Maximum content in complete feed stuff, mg/kg
<ul style="list-style-type: none"> <li>• L-Ascorbic acid</li> <li>• Sodium L-ascorbate</li> <li>• Calcium di (L-ascorbate)</li> <li>• 5,6-Diacetyl-L-ascorbic acid</li> <li>• 6-Palmitoyl-L-ascorbic acid</li> <li>• Tocopherol-rich extracts of a natural origin</li> <li>• Synthetic alpha-tocopherol</li> <li>• Synthetic gamma-tocopherol</li> <li>• Synthetic delta-tocopherol</li> </ul>	GMP
<ul style="list-style-type: none"> <li>• Propyl gallate</li> <li>• Octyl gallate</li> <li>• Dodecyl gallate</li> </ul>	100, singly or in combination
Butylated hydroxyanisole (BHA)	150

#### A.2 Requirements for emulsifiers, stabilisers, thickeners and gelling agents

##### A.2.1 General

Maize bran and pollard 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 A.2.2 and A.2.3 or any other emulsifier, stabiliser, thickener or gelling agent as shall be approved by OIE.

##### A.2.2 Name or description

- Lecithin;

- Alginic acid;
- Sodium alginate;
- Potassium alginate;
- Ammonium alginate; Calcium alginate;
- Propylene glycol alginate (propane-1,1-diol alginate) Agar;
- Carrageenan;
- Furcellaran;
- Locust bean gum (carob gum);
- Tamarind seed flour;
- Guar gum (gum flour);
- Tragacanth;
- Acacia (gum Arabic);
- Xanthan gum;
- D-glucitol (sorbitol);
- Mannitol;
- Glycerol;
- Pectins;
- Microcrystalline cellulose;
- Methylcellulose;
- Ethylcellulose;
- Hydroxypropyl cellulose;
- Hydroxypropylmethylcellulose;
- Ethylmethylcellulose;
- 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;
  - acetic;
  - lactic;

- citric;
- tartaric;
- monoacetyltartaric; and
- diacetyltartaric.

### A.2.3 Sucrose esters or fatty acids

A.2.3.1 The following sucrose esters fatty acids may be added to maize bran and pollard:

- mixture of sucrose esters of monocyl and diacylglycerols (sucroglycerides, polyglycerides);
- polyglycerol esters of non-polymerised edible fatty acids;
- propylene glycol esters of fatty acids (propane-1,2-diol esters of fatty acids);
- stearoyl-2-lactylic acid; sodium stearoyl-1,2-lacylate; calcium stearoyl-1,2-lactylate;
- stearoyl-1-tartrate; glycerol poly (ethylene glycol) ricinolate; dextrans; sorbitan monostearate;
- sorbitan tristearate; sorbitan monolaurate; sorbitan mono-eleate; sorbitan monopalmitate;
- partial polyglycerol esters of polycondensed fatty acids of castor oil (polyglycerol polyricinoleate) polyoxyethylene (20) sorbitan monolaurate;
- polyoxyethylene (20) sorbitan monopalmitate, polyoxyethylene (20) sorbitan monostearate;
- polyoxyethylene (20) sorbitan tristearate, polyoxyethylene (20) sorbitan monocleate;
- polyoxyethylene (20) sorbitan tricleate, polyoxyethylene (8) sorbitan stearate; and
- polyoxyethylene (40) stearate.

A.2.3.2 The additives listed shall conform to the requirements in Table A.2.

**Table A.2 — Specifications for emulsifiers, stabilisers, thickeners and gelling agents**

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

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

### A.3.1 General

Maize bran and pollard 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 A.3.2.

### A.3.2 Name or description

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

### A.4 Requirements for aromatic and appetising substances

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

**Table D.3 — Requirements for aromatic and appetising substances**

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

## Bibliography

EAS 230:2001, *Maize bran as animal feeds specification*

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