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**Dry cowpeas — Specification**

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



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This African Standard was prepared by the ARSO Technical Committee on Cereals, pulses and derived products (ARSO/TC 12)

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## Introduction

Cowpea (*Vigna unguiculata* (L.)) is one of the most important grain legumes in Africa and in parts of the Americas and Asia. The protein in cowpea seed is rich in the amino acids, lysine and tryptophan, compared to cereal grains; however, it is deficient in methionine and cystine when compared to animal proteins. Therefore, cowpea seed is valued as a nutritional supplement to cereals and an extender of animal proteins.

Cowpeas are part of the strategic food commodity basket recognized by the declaration of the African Union Food Security Summit held in December 2006 in Abuja, Nigeria. This standard was harmonized as part of the response by the resolution of the AU Food Security Summit to harmonize standards and grades for strategic food commodities as a means of promoting and facilitating intra-African food trade. Such facilitation would lead to free movement of food commodities from areas of surplus to areas of deficit, leading to overall achievement of food and nutrition security, food self-sufficiency and socioeconomic development of the African continent.

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## Dry cowpeas — Specification

### 1 Scope

This African Standard specifies the requirements and methods of sampling and test for dry cowpeas of the varieties (cultivars) grown from *Vigna unguiculata* (L.) Sync. *Vigna sinensis* (L.) intended for human consumption. It does not apply to processed cowpeas.

### 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.

ARS 53, *General principles of food hygiene — Code of practice*

ARS 56, *Pre-packaged foods — Labelling*

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

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

ISO 605, *Pulses — Determination of impurities, size, foreign odours, insects, and species and variety — Test methods*

ISO 24333, *Cereals and cereal products — Sampling*

ISO 24557, *Pulses — Determination of moisture content — Air-oven method*

### 3 Definitions

For the purpose of this standard the following definitions shall apply.

#### 3.1

##### **cowpeas**

dried mature seeds of *Vigna unguiculata* (L.) and *Vigna sinensis* (L.)

#### 3.2

##### **broken cowpeas**

pieces of cowpeas that are less than three-quarters the size of a whole grain

#### 3.3

##### **rotten and damaged cowpeas**

cowpeas and pieces of cowpeas that are materially damaged or discoloured by frost, weather, disease, weevils or other insects, or other causes so as to materially affect the appearance and quality of the cowpeas

#### 3.4

##### **discoloured cowpeas**

cowpeas which are damaged by heat, frost or water

#### 3.5

##### **shriveled cowpeas**

cowpeas which are under-developed and wrinkled over their entire surface

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## 3.6

### split

broken pieces of cowpeas that are less than three-quarters of the whole seed, and cotyledons that are loosely held together by the seed coat

## 3.7

### food grade packaging material

material, made of substances which are safe and suitable for their intended use and which will not impart any toxic substance or undesirable odour or flavour to the product

## 3.8

### foreign matter

all organic and inorganic material (such as plant parts, sand, soil, glass, filth) other than cowpeas

### 3.9 poisonous, toxic and/or harmful seeds

any seed which if present in quantities above permissible limit may have damaging or dangerous effect on health, organoleptic properties or technological performance such as Jimson weed — *Datura* (*D. fastuosa* L. and *D. stramonium* L.) corn cockle (*Agrostemma githago* L., *Machai Lallium remulenum* L.) Akra (*Vicia* species), *Argemone mexicana*, Khesari and other seeds that are commonly recognized as harmful to health

## 4 Requirements

### 4.1 General requirements

Cowpeas shall be:

- (a) the dried mature seeds of *Vigna unguiculata* (L.) and *Vigna sinensis* (L.)
- (b) clean, well-filled, wholesome, uniform in size, shape, colour and in sound merchantable conditions;
- (c) free from substances which render them unfit for human consumption;
- (d) free from abnormal flavours, musty, sour or other undesirable odour, obnoxious smell and discolouration;
- (e) free of pests, live animals, animal carcasses, animal droppings, fungus infestation, added colouring matter, moulds, impurities of plant and animal origin including insects, rodent hair and excreta and shall meet any other sanitary and phytosanitary requirements;
- (g) free from toxic, poisonous or harmful seeds that are commonly recognized as harmful to health.

### 4.2 Specific requirements

#### 4.2.1 Grading

Cowpeas shall be graded into three grades on the basis of the tolerable limits established in Table 1 which shall be additional to the general requirements set out in this standard.

Table 1 — Specific requirements

Characteristics		Limits			Method of test
		Grade 1	Grade 2	Grade 3	
(1)	Foreign matter, % max. m/m	0.2	0.6	1.0	ISO 605
(2)	Inorganic matter, % max. m/m	0.1	0.5	0.75	
(3)	Broken/split cowpeas, % m/m	1	2	3	

(4)	Pest damaged cowpeas , % max. m/m	2	3	6	
(5)	Rotten and diseased cowpeas , % max. m/m	0.5	0.5	1	
(6)	Discoloured cowpeas , % max. m/m	1	1	3	
(7)	Immature/shriveled cowpeas , % max. m/m	1	2	3	
(8)	Filth, % m/m	0.1	0.1	0.1	
(9)	Total defective cowpeas, % max. m/m	2	4	5	
(10)	Moisture, % max. m/m	14.0	14.0	14.0	ISO 24557
NOTE 1 The parameter, total defective cowpeas is not the sum total of the individual defects. It is limited to 70% of the sum total of individual defects.					

## 5 Contaminants

### 5.1 Heavy metals

Cowpeas shall comply with those maximum limits for metal contaminants specified in CODEX STAN 193 and in particular those listed in Table 2.

**Table 2 — Metal contaminants**

S/N	Parameter	Limit (ppm max)	Test method
(1)	Lead (Pb)	0.1	ISO 27085
(2)	Cadmium (Cd)	0.1	ISO 27085

### 5.2 Pesticide residues

Dry cowpeas shall comply with those maximum pesticide residue limits established by the Codex Alimentarius Commission for this commodity

## 6 Hygiene

6.1 Dry cowpeas shall be produced, prepared and handled under hygienic conditions in accordance with ARS 53.

## 7 Packaging

7.1 Dry cowpeas shall be packaged in suitable food grade packaging materials which shall be clean, sound, free from insect, fungal infestation and the packing material shall be of food grade quality and shall be securely closed and sealed.

7.2 Dry cowpeas shall be packaged in packaging materials which will safeguard the hygienic, nutritional, technological and organoleptic qualities of the products.

7.3 Each package shall contain dry cowpeas of the same type and of the same grade designation.

## 8 Labelling

### 8.1 General Labelling

The following specific labelling requirements shall apply and shall be legibly and indelibly marked in accordance with the requirements of ARS 56:

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- (i) product name as “Dry Cowpeas”;
- (ii) variety;
- (iii) grade;
- (iv) name, address and physical location of the producer/ packer/importer;
- (v) lot/batch/code number;
- (vi) net weight, in SI units;
- (vii) the declaration “Food for Human Consumption”
- (viii) storage instruction as “Store in a cool dry place away from any contaminants”;
- (ix) crop year;
- (x) packing date;
- (xi) instructions on disposal of used package;
- (xii) country of origin;
- (xiii) a declaration on whether the cowpeas were genetically modified or not.

### 8.2 Labelling of non-retail containers

Information detailed in 8.1 shall be given either on the container or in accompanying documents, except that the name of the product, lot identification and the name and address of the processor or packer as well as storage instructions, shall appear on the container.

For products purchased for use by the buyer/retailer, at least the name of producer, lot number and/or ‘crop year’ shall be indicated on the container.

Lot identification and the name and address of the processor or packer may be replaced by an identification mark provided that such a mark is clearly identifiable with the accompanying documents.

## 9 Sampling

Sampling shall be done in accordance with the ISO 24333.

## Bibliography

EAS 755:2012, *Cowpeas — Specification*

*Pulses Grading and Marking Rules*, 2003, Schedule XIX, *Grade designation and definition of quality of Lobia*, Ministry of Agriculture, India, 7<sup>th</sup> April 2004

Malawi Standard, MBS 242:1991, *Cowpeas — Specification*

CODEX STAN 171:1989 (Rev. 1:1995), *Standard for Certain Pulses*

Australian Pulse Standards, 2012/2013 — *Caloona / Poona cowpeas minimum export standard*

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Illustration of cowpeas



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