
Dry chickpeas — Specification



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Introduction

Chickpea is grown in tropical, sub-tropical and temperate regions. Chickpea makes up more than 20 percent of world pulse production, behind dry beans and peas. Kabuli type is grown in temperate regions while the Desi type chickpea is grown in the semi-arid tropics. Chickpea is consumed as a dry pulse crop or as a green vegetable with the former use being most common. Seeds average about 20% protein, 5% fat and 55% carbohydrate. Seeds are sold in markets either dry or canned. Chickpea seeds are eaten fresh as green vegetables, parched, fried, roasted, and boiled; as snack food, sweet and condiments; seeds are milled and the flour can be used as soup, dhal, and to make bread; prepared with pepper, salt and lemon it is served as a side dish. Dhal is the split chickpea without its seedcoat, dried and cooked into a thick soup or milled into flour for snacks and sweetmeats. Sprouted seeds are eaten as a vegetable or added to salads. Young plants and green pods are eaten like spinach. Animal feed is another use of chickpea in many countries. Green husks, and green or dried stems and leaves are used for stock feed; whole seeds may be milled directly for feed. Chickpeas yield 21% starch suitable for textile sizing, giving a light finish to silk, wool, and cotton cloth.

Chickpeas 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.

Dry chickpeas — Specification

1 Scope

This Draft African Standard specifies requirements, sampling and test methods for dry chickpeas of the varieties (cultivars) grown from *Cicer arietinum* (L.) intended for human consumption.

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

ARS 56, *Prepackaged foods — Labelling*

AOAC Official Method 999.10:1999, *Determination of lead, cadmium, copper, iron and zinc in foods — Atomic absorption spectrophotometry after microwave digestion*

AOAC Official Method 999.11:1999, *Determination of lead, cadmium, copper, iron and zinc in foods — Atomic absorption spectrophotometry after dry ashing*

AOAC Official Method 2001.04, *Determination of Fumonisin B₁ and B₂ in corn and corn flakes — Liquid chromatography with immunoaffinity column cleanup*

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 6579, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection of Salmonella spp.*

ISO 6888 (all parts), *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species)*

ISO 7251, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of presumptive Escherichia coli — Most probable number technique*

ISO 21527-2, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of yeasts and moulds — Part 2: Colony count technique in products with water activity less than or equal to 0.95*

ISO 24333, *Cereals and cereal products — Sampling*

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

3 Terms and definitions

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

3.1

dry chickpeas

dry mature grains of *Cicer arietinum* (L.)

3.2

contaminated peas

grain containing any substance in sufficient quantity that renders grain is unfit for consumption by persons or animals or is adulterated within the meaning of the regulations on food safety

3.3

damaged

whole or broken chickpeas that are sprouted, frost damaged, heated, pest damaged, distinctly deteriorated or discoloured by weather or disease, or that are otherwise damaged in a way that seriously affects their quality

3.4

pest damaged peas

grain showing damage from attack by rodents, insects, mites or other pests

3.5

mouldy chickpeas

chickpeas with visible mycelial growth on their surface

3.6

immature/shriveled grain

chickpeas which are underdeveloped and wrinkled over the entire surface

3.7

rotten and diseased

chickpeas affected by mould growth or bacterial decomposition, or other causes that may be noticed without having to cut the grains to examine them and render them unsafe for human consumption

3.8

discoloured chickpeas

chickpeas which are damaged by heat, frost or water

3.9

shriveled chickpeas

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

3.10

broken

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

3.11

contrasting varieties

other varieties that are of a different colour, size, or shape from the grains of the designated variety

3.12

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

3.13

foreign matter

all organic and inorganic material other than dry or broken and other edible grains

3.13.1

inorganic foreign matter

stones, glass, pieces of soil and other mineral matter

3.13.2**organic foreign matter**

any animal or plant matter (seed coats, straws, weeds) other than dry chickpeas, broken dry chickpeas, inorganic extraneous matter and harmful/toxic seeds.

3.14**filth**

impurities of animal origin including dead insects, rodent hair and excreta

3.15**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**

Dry chickpeas shall be:

- a) the dried mature grains of *Cicer arietinum* (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 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; and
- f) free from toxic or noxious seeds that are commonly recognized as harmful to health.

4.2 Specific requirements**4.2.1 Grading**

Chickpeas shall be graded into three grades on the basis of the tolerable limits established in Table 1 when tested in accordance with the test methods specified therein which shall be additional to the general requirements set out in this standard.

Table 1 — Specific requirements for dry chickpeas

S/N	Characteristic	Limit % m/m, max.			Test method
		Grade 1	Grade 2	Grade 3	
i.	Foreign matter	1.0	3.0	3.0	ISO 605
ii.	Inorganic matter	0.1	0.5	0.70	
iii.	Broken grains	1	2	3	
iv.	Pest damaged grains	2	4	6	
v.	Rotten and diseased grains	0.5	0.5	1	
vi.	Discoloured grains	2	2	2	
vii.	Immature/shrivelled grains	3	5	8	
viii.	Filth	0.1	0.1	0.1	
ix.	Other edible grains	0.1	0.5	3.0	
x.	Contrasting varieties	0.5	1.0	2.0	
xi.	Total defective chickpeas	3.0	6.0	8.0	ISO 24557
xii.	Moisture	14.0	14.0	14.0	

NOTE The parameter, total defective chickpeas 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

Chickpeas shall comply with those maximum limits for heavy metal contaminants specified in CODEX STAN 193.

5.2 Pesticide residues

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

6 Hygiene

6.1 Chickpeas shall be produced, prepared and handled in accordance with the provisions of appropriate sections of ARS 53.

6.2 When tested by appropriate methods in the standards listed in Clause 2, the product

- shall be free from microorganisms in amounts which may represent a hazard to health and shall not exceed the limits stipulated in Table 3; and
- shall not contain any substance originating from microorganisms in amounts which may represent a hazard to health.

Table 3 — Microbiological limits for dry chickpeas

S/N	Micro-organism	Limit	Test method
i.	Yeasts and moulds, max. per g	10 ⁵	ISO 21527-2
ii.	<i>Staphylococcus aureus</i> , cfu per g, max.	10 ³	ISO 6888
iii.	<i>E. coli</i> , per g	Absent	ISO 7251
iv.	<i>Salmonella</i> , per 25 g	Absent	ISO 6579

7 Packaging

7.1 Chickpeas shall be packed 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 Chickpeas shall be packed in containers which will safeguard the hygienic, nutritional, and organoleptic qualities of the products.

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

8 Labelling

8.1 Labelling of retail packages

In addition to the requirements in ARS 56, each package shall be legibly and indelibly marked with the following:

- a) product name as "Chickpeas";
- b) variety;
- c) grade;
- d) name, address and physical location of the producer/ packer/importer;
- e) lot/batch/code number;
- f) net weight, in SI units;
- g) the declaration "Food for Human Consumption";
- h) storage instruction as "Store in a cool dry place away from any contaminants";
- i) crop year;
- j) packing date;
- k) instructions on disposal of used package;
- l) country of origin; and
- m) a declaration on whether the chickpeas 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.

Annex A
(informative)

Illustration of chickpeas



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Bibliography

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- [6] Australian Pulse Standards, 2012/2013 — *Chickpeas minimum receival standards*

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