



DRAFT TANZANIA STANDARD

Cauliflower - specification

DRAFT STANDARD FOR PUBLIC COMMENTS ONLY

0. foreword

Cauliflower is a temperate vegetable grown for its edible flowering head composed of a white inflorescence consumed in curries, soups, and pickles. It plays an important role in the human diet due to its attractive appearance, good taste, and nutritive value. Cauliflower is rich in vitamin C and a good source of folate.

This Tanzania Standard was prepared in order to provide guidance to cauliflowers producers and traders as well as regulators, and to ensure safety and quality of the produce.

In the preparation of this Tanzania standard considerable assistance was derived from UNECE Standard FFV-11Cauliflower, published by the United Nations Economic Commission for Europe; and

In reporting the results of a test or analysis made in accordance with this standard, if the final value observed or calculated is to be rounded off, it shall be done in accordance with TZS 4 (see clause 2).

1. Scope

This standard specifies quality and safety requirements, methods of sampling and test of cauliflower grown from *Brassica oleracea* var. *botrytis* L. of the family *Brassicaceae* to be supplied fresh to the consumer. Cauliflower for industrial processing are excluded.

2. Normative references

The following referenced standards are indispensable for the application of this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced standards (including any amendments) applies.

- a) TZS 4, *Rounding off of numerical values*
- b) TZS 109, *Code of hygiene for food processing unit*

- c) TZS 122-1- *Microbiology of the food chain — Horizontal method for the detection, enumeration and serotyping of Salmonella- Part 1: Detection of Salmonella spp.*
- d) TZS 538, *Packaging, marking and labeling of foods.*
- e) TZS 552, *Code of Hygienic Practice for Fresh Leafy Vegetables*
- f) TZS 852-1- *Microbiology of the food chain - Horizontal method for the detection and enumeration of Listeria monocytogenes and of Listeria spp - Part 1: Detection method*
- g) TZS 1002, *Fresh fruits and vegetables - Sampling.*
- h) TZS 1003, *Guide to the pre-packaging of fresh fruits and vegetables*
- i) TZS 2425 - *Microbiology of food and animal feeding stuffs- Horizontal method for the detection of Escherichia coli O157*
- j) *Codex Stan 193, Codex General standard for contaminants and toxins in food and feed*
- k) *Codex pesticide residues in food online data base*

3 Terms and definitions

For the purposes of this standard, the following terms and definitions apply;

3.1 sound

produce not affected by rotting or deterioration such as to make it fit for consumption

3.2 clean

practically free of any visible foreign matter

3.3 trim

remove unwanted leaves by cutting to make the produce of the required size

3.4 pest

any organism that directly or indirectly affects the quality and safety of the produce

3.5 textures

appearance or the physical feel of the produce

3.6 firm/compact

closely crowded together, a condition found before the flower buds start opening

3.7 intact

no parts removed and that have not suffered any damage making them incomplete

4 Requirements

4.1 General requirements

a) In all classes, subject to the special provisions for each class and the tolerances allowed, the heads shall be:

- Intact; however, cauliflower may be presented “with leaves”, “without leaves”, or “trimmed” provided they comply to the following provisions:

-“With leaves”: cauliflower covered with healthy green leaves, sufficient in number and long enough to cover and protect the head entirely. The stem shall be cut off slightly below the protecting leaves.

-“Without leaves”: cauliflower with all the leaves and the non-edible portion of the stem removed. At most, there may be five small and tender pale green leaves, untrimmed, close to the head.

-“Trimmed”: cauliflower with a sufficient number of leaves left on to protect the head. These leaves shall be healthy and green and may be trimmed. The stem shall be cut off slightly below the protecting leaves

- Sound
- Clean
- Fresh in appearance
- Practically free from pests and damage caused by them
- Free of abnormal external moisture
- Free of any foreign smell and/or taste.

b) In addition, the development and condition of the cauliflower shall be such as to enable them to:

- With stand transportation and handling
- Arrive in satisfactory condition at the place of destination.

4.2 Classification

Cauliflower shall be classified in three classes, as defined below:

4.2.1 “Extra” Class

Cauliflower in this class shall be of superior quality. They shall be characteristic of the variety and/or commercial type. The heads shall be:

- well formed, firm, compact
- of very close texture
- Uniformly white or slightly creamy in colour, for white varieties.

They shall be free from defects, with the exception of very slight superficial defects, provided these do not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package. In addition, if the cauliflower is put on sale “with leaves” or “trimmed”, the leaves shall have a fresh appearance.

4.2.2 Class I

Cauliflower in this class shall be of good quality. They shall be characteristic of the variety and/or commercial type. The heads shall be:

- firm
- of close texture
- white to ivory or creamy in colour, for white varieties
- free from defects, such as blemishes, protruding leaves in the head, traces of frost, bruising.

The following slight defects may be allowed, provided these do not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package:

- a slight defect in shape or development
- slight defects in colouring
- a very slight softness.

In addition, if the cauliflower is put on sale “with leaves” or “trimmed”, the leaves shall have a fresh appearance.

4.2.3 Class II

This class includes cauliflower that do not qualify for inclusion in the higher classes but satisfy the general requirements specified in clause 4.1.

The following defects may be allowed, provided the cauliflower retains their essential characteristics with regards to the quality, the keeping quality and presentation:

- defects in shape or development
- slightly loose in texture
- yellowish in colour, for white varieties
- slight traces of sun scorching
- not more than five protruding pale green leaves
- a slight softness (but not wet or greasy to the touch).

In addition, they may have two of the following defects:

- slight traces of damage caused by pests slight superficial damage due to frost
- slight bruising.

4.3 Provisions concerning sizing

Size is determined by the maximum diameter of the equatorial section. To ensure uniformity in size, the range in size between produce in the same

package shall not exceed 4cm. Loose-headed long-stemmed cauliflower are exempted from the sizing provisions.

4.4 Provisions concerning tolerances

Tolerances in respect of quality and size shall be allowed in each lot for produce not satisfying the requirements of the class indicated.

4.4.1 Quality tolerances

4.4.1.1 “Extra” class

A total tolerance of 5%, by number or weight, of cauliflower not satisfying the requirements of the class but meeting those of Class I is allowed. Within this tolerance not more than 0.5 % in total may consist of produce satisfying the requirements of Class II quality.

4.4.1.2 Class I

A total tolerance of 10%, by number or weight, of cauliflower not satisfying the requirements of the class but meeting those of Class II is allowed. Within this tolerance not more than 1% in total may consist of produce satisfying neither the requirements of Class II quality nor the general requirements, or of produce affected by decay.

4.4.1.3 Class II

A total tolerance of 10%, by number or weight, of cauliflower satisfying neither the requirements of the class nor the general requirements is allowed. Within this tolerance not more than 2% in total may consist of produce affected by decay.

4.4.2 Size tolerances

For all classes (if sized); a total tolerance of 10%, by number or weight, of cauliflower not satisfying the requirements with regards to sizing is allowed.

4.5 Provisions concerning presentation

4.5.1 Uniformity

The contents of each package shall be uniform and contain only cauliflower of the same origin, variety or commercial type, quality and size (if sized).

In addition, for “Extra” Class, uniformity in colouring is required, however, a mixture of cauliflower of distinctly different commercial types and/or colours may be packed together in a package, provided they are uniform in quality and, for each commercial type and/or colour concerned, in origin. However, in case of those mixtures uniformity in size is not required.

The visible part of the contents of the package shall be representative of the entire contents.

5

6 Hygiene

6.1 It is recommended that the produce covered by the provisions of this Standard be prepared and handled in accordance with TZS 109 (see clause 2) and TZS 552.

6.2 Cauliflower shall also comply with the microbial requirements prescribed in Table 1.

Table 1 Microbiological limits for Cauliflower

S/N	Test	Test Method	Requirement
1.	<i>Listeria monocytogenes</i> per 25g	TZS 852-1	Absent
2.	<i>Escherichia coli</i> O157:H7	TZS 2425	Absent
3.	<i>Salmonella</i> per 25g	TZS 122-1	Absent

7 Contaminants

7.1 Heavy metal contaminants

Cauliflower shall comply with those maximum metal contaminants established by the Codex Stan 193.

7.2 Pesticide residues

Cauliflower shall comply with those maximum residue limits established in the Codex pesticide residues in food online data base.

8 Sampling and tests

8.1 Sampling

Representative samples of cauliflower shall be drawn as prescribed in TZS 1002 (see clause 2).

8.2 Tests

Tests shall be done in accordance with the methods prescribed in this standard.

9. Packing, marking and labelling

9.1 Packing

Cauliflower shall be packed in such a way as to protect the produce properly. The materials used shall be of food grade, clean and of a quality such as to avoid causing any external or internal damage to the produce. The use of materials, particularly of paper or stamps bearing trade specifications, is allowed, provided the printing or labelling has been done with nontoxic ink or glue.

9.1.1 The containers shall meet the quality, hygiene, ventilation and resistance characteristics that shall ensure suitable handling, shipping and preserving cauliflower. Packages shall be free of foreign matter and objectionable smell.

9.1.2 The use of any substance tending to modify the natural characteristics of the produce, especially form, texture and taste shall be prohibited.

9.1.3 In addition to the provisions covered by this standard, cauliflower shall also be packed in accordance with TZS 538 and TZS 1003 (See clause 2).

9.2 Marking and labelling

9.2.1 Each package shall legibly and indelibly bear the following information in Swahili or and English on the same side:

- a) Name and address of the exporter/importer, packer and/ or dispatcher/distributor;
- b) Name of the produce (Cauliflower);
- c) Country of origin;
- d) Class;
- e) Size (if sized) expressed as minimum and maximum diameters or number of units;
- f) Net weight (kg);
- g) Batch number
- h) Storage condition.

9.2.2 Certification mark – Each container may also be marked with TBS certification mark.

NOTE: The use of TBS certification mark is governed by provisions of the Standards Act, 2009. Details of the conditions under which a license for the use of TBS certification mark may be granted to manufacturers or producers, may be obtained from TBS.