ETHIOPIAN STANDARD

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Meat with vegetables (soup/stew) – Specification

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Foreword

This Ethiopian Standard has been prepared under the direction of Technical Committee for Food product in general (TC 91) and published by the Institute of Ethiopian Standards (IES).

The standard has been developed to address observed needs and to support the local industry in order to make progress through uprising competitiveness and maintain comparative market advantage both domestically and internationally.

Information has been gathered from various relevant resources in developing it.

Codex Stan 192, General standard for food additives

Codex Stan 193, General standard for contaminants and toxins in food and feed.

EPHI Data, Composition of Foods Commonly used in Ethiopia

Acknowledgement is made for the use of information from the above publication.

Meat with vegetables (soup/stew) – Specification

1. Scope

This Ethiopian Standard specifies the requirements, test methods and sampling for meat with vegetables soup/stew which is processed and packed for direct human consumption.

2. Normative References

The 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.

CES 70, Iodized edible salt - Specification

CES 73, Labeling of pre-packed foods–General standard.

ES 577, Recommended code of practice–General principle of food hygiene.

ES 929, Code of practice-food hygiene management.

ES ISO 930, Spices and condiments–Determination of acid-insoluble ash

ES 1117, Tin in canned foods, Atomic absorption Spectrophotmetric method

ES ISO 1443, Meat and meat products – Determination of total fat content

ES ISO 1871, Food and feed products – General guidelines for the determination of nitrogen by the Kjeldahl method

ES ISO 4831, Microbiology of food and animal feeding stuffs – Horizontal method for the detection and enumeration of Coliforms–Most probable number technique.

ES ISO 4833-1, Microbiology of the food chain-Horizontal method for the enumeration of microorganisms – Part 1: Colony count at 30 ^{0}C by the pour plate technique.

ES ISO 4833-2, Microbiology of the food chain–Horizontal method for the enumeration of microorganisms–Part 2: Colony count at 30 ^{0}C by the surface plating technique.

ES ISO 6541, Agricultural products- Determination of crude fiber content- Modified Scharrer method

ES ISO 6579-1, Microbiology of the food chain —Horizontal method for the detection, enumeration and stereotyping of Salmonella–Part1: Detection of salmonella.

ES ISO 6579-2, Microbiology of food and animal feed — Horizontal method for the detection, enumeration and stereotyping of Salmonella–Part2: Enumeration by a miniaturized most probable number technique.

ES ISO 6579-3, Microbiology of the food chain —Horizontal method for the detection, enumeration and stereotyping of Salmonella–Part3: Guidelines for stereotyping of *Salmonella spp*.

ES ISO 6888-1, Microbiology of food and animal feeding stuffs —Horizontal method for the enumeration of coagulase-p-staphylococci (*Staphylococcus aureus* and other species) – Part 1: Technique using Baird-Parker agar medium.

ES ISO 6888-2, Microbiology of food and animal feeding stuffs —Horizontal method for the enumeration of coagulase-p-staphylococci (*Staphylococcus aureus* and other species) – Part 2: Technique using rabbit plasma fibrinogen agar medium.

ES ISO 6888-3, Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of coagulase-positive staphylococci (*Staphylococcus aureus* and other species) – Part 3: Detection and MPN technique for low numbers.

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

ES ISO 16050, Food stuffs–Determination of aflatoxin B1, and the total content of aflatoxin B1, B2, G1 and G2 in cereals, nuts and derived products–High performance liquid chromatographic method.

ES ISO 17919, Microbiology of the food chain - Polymerase chain reaction (PCR) for the detection of food-borne pathogens - Detection of Botulinum type A, B, E and F Neurotoxin-producing clostridia

ES ISO 21527-1, Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of yeasts and moulds–Part 1: Colony count technique in products with water activity greater than 0.95.

ES 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.

ES ISO 22002-1, Prerequisite programmes on food safety–Part1 Food manufacturing.

ES ISO 24333, Cereals and cereal products sampling

ES ISO 11290-2,Microbiology of the food chain — Horizontal method for the detection and enumeration of Listeria monocytogenes and of Listeria spp. Part 2: Enumeration method

3. Terms and Definitions

For the purposes of this standard the following terms and definitions shall apply.

3.1
vegetable
is an edible part of a plant, usually herbaceous, that is consumed as food, including roots, stems, leaves, flowers, and sometimes fruits or seeds.

3.2
meat
edible portion of an animal that consists of muscle tissue, organ and fat.

3.3
soup
a semi-liquid or liquid food consisting of meat, vegetables and other ingredients such as grains, legumes, and seasonings.

3.4
stew
a dish consisting of meat, vegetables and other ingredients such as grains, legumes, and seasonings which is thicker than soup.

4. Ingredients

4.1 Basic ingredients

Basic Ingredients shall include:

4.1.1 Vegetables like pumpkin, potato, carrot, cabbage, etc.

4.1.2 Meat

4.2 Optional ingredients

Optional ingredients used for making stew shall comply with the relevant Ethiopian Standards: this may include:

4.2.1 herbs and spices;

4.2.2 grains;

4.2.3 legumes;

4.2.4 iodized edible salt complying with CES 70;

4.2.5 edible fats and oils complying Ethiopian Standards; and

4.2.6 other permitted ingredients.

5. Requirements

5.1 General Requirements

The product shall be free from:

5.1.1. unpleasant odor and flavors;

5.1.2. mould growth when examined with naked eyes;

5.1.3. rancidity;

5.1.4. foreign matters; and

5.1.5. any adulterants.

5.2 Specific Requirements

Meat with Vegetables shall comply with the specific requirements in Table 1 below

Table 1 Specific requirement for meat with vegetables

Characteristics	Limits	Test Methods
Carbohydrate, %, m/m, Min.	shall be declared	AOAC 2020.07
Total energy, kcal/100g	shall be declared	
Crude fiber % m/m, Max.	1.5	ES ISO 6541
Total fat content % m/m, Max.	5.0	ES ISO 1443
Total drained weight,%, Min.	50.0	Annexed
Acid insoluble ash, %, m/m, Max.	1.0	ES ISO 930
Crude Protein content, % m/m, Min.	6.0	ES ISO 1871

Note: The amount of salt shall be declared on the labelling.

6. Food Additives

Food additives in the Meat with Vegetables shall comply with Codex Stan 192.

7. Contaminants

7.1. Metals Contaminants

The product shall comply with those maximum limits for metal contaminants specified in Codex Stan.193, and in particular listed in Table 3 below.

Table 3 Metal limits in meat with vegetables

Characteristics	Maximum limit, mg/kg (ppm)	Test Methods
Lead	0.1	AOAC 999.10
Arsenic	0.2	AOAC 942.17
Mercury	0.1	AOAC 952.14
Cadmium	0.1	AOAC 999.10
Tin	250	ES ISO 2447

7.2. Pesticide residues

The product shall comply with those maximum residue limits established by the Codex Alimentarius Commission for this or its similar food commodity.

7.3. Mycotoxins

The product shall comply with those maximum mycotoxin limits as established by the Codex Alimentarius Commission for food and feed stuffs. In particular total Aflatoxins in this product shall not exceed 10 µg/kg and 5 µg/kg for aflatoxin B1when tested in accordance with ES ISO 16050.

8. Hygiene

8.1. The product shall be produced, prepared, and handled in accordance with ES 577, ES 929**,** and ES ISO 22002-1.

8.2. The product shall be free from pathogenic microorganisms and shall comply with the microbiological limits. indicated in Table 4 below.

Table 4 Microbiological limits for meat with vegetables

Characteristics	**Requirements**	**Test Methods**
Total plate count, cfu/g, Max.	10^2	ES ISO 4833-1 ES ISO 4833-2
Total coliform, cfu/g, Max.	10	ES ISO 4831
S. aureus, cfu/g	Absent	ES ISO 6888-1 ES ISO 6888-2 ES ISO 6888-3
E. coli, cfu/g	Absent	ES ISO 7251
L. monocytogenes, cfu/g	Absent	ES ISO 11290-2
Salmonella, cfu/25g	Absent	ES ISO 6579-1 ES ISO 6579-2 ES ISO 6579-3
Yeast and molds, cfu/g, Max.	10	ES ISO 21527-1 ES ISO 21527-2
C. botulinum, cfu/g	Absent	ES ISO 17919

9. Packaging and Labelling

9.1. Packaging

9.1.1. The product shall be packed with clean, sound material, free from insect and fungal infestation and the packing material shall be of food grade quality and shall be securely sealed.

9.1.2. The product shall be packed in containers which will safeguard the hygienic, nutritional and organoleptic qualities of the products.

9.1.3. The containers, including packaging material, shall be made of substances which are safe and suitable for their intended use. They shall not impart any toxic substance or undesirable odour or flavor to the product.

9.2. Labelling

The labeling shall comply with the requirements of CES 73, and shall be legibly and indelibly marked with the following:

a) name of the product with the specific vegetable used as **“Meat with Pumpkin soup” or “Meat with Pumpkin stew” or “Meat with Potato soup” or “Meat with Potato stew” …**;

b) name, address and physical location of the producer/packer/importer;

c) list of ingredients (descending order);

d) the kind of meat used;

e) code or batch number;

f) nutritional information;

g) net mass;

h) country of origin;

i) manufacturing date(dd/mm/yyyy);

j) storage recommendation; and

k) expiry date (dd/mm/yyyy).

10. Sampling Method

Meat with vegetables shall be sampled using the method specified in ES ISO 24333.

Annex A

(Normative)
Determination of Drained Weight

The drained weight of all sample units shall be determined by the following procedure:

(i) Maintain the container at a temperature between 20 ^{0}C and 30 ^{0}C for a minimum of 12 hours prior to examination.

(ii) Open and tilt the container to distribute the contents on a pre-weighed circular sieve which consists of wire mesh with square openings of 2.8 mm x 2.8 mm.

(iii) Incline the sieve at an angle of approximately 17 - 20^0 and allow the soup to drain for two minutes, measured from the time the product is poured into the sieve.

(iv) Weigh the sieve containing the drained soup.

(v) The weight of drained soup is obtained by subtracting the weight of the sieve from the weight of the sieve and drained product.

Bibliography

AOAC 925.56, Iodine in iodized salt. Titrimetric method

AOAC 942.17, Determination of Arsenic in foods - Molybdenum blue method

AOAC 952.14, Mercury in foods – Colorimetric dithizone method

AOAC 999.10, Lead, Cadmium, Copper, Iron, and Zinc in foods, Atomic Absorption Spectrophotometry after dry ashing.

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INSTITUTE OF ETHIOPIAN STANDARDS

Organization and Objectives

The Institute of Ethiopian Standards (IES) is the national standards body of Ethiopia. IES is re-named by the proclamation number 1263/2021, from Ethiopian Standards Agency (ESA) to Institute of Ethiopian standards, with the mandate given by the regulation Number, 193/2010 and proclamation number, 1263/2021.

IES's objectives are:

- Develop Ethiopian standards and establish a system that enable to check whether goods and service are in compliance with the required standards,
- Facilitate the country's technology transfer through the use of standards,
- Develop national standards for local products and services so as to make them competitive in the international market.
- Conduct standards related research and provide training and technical support.

Ethiopian Standards

The Ethiopian Standards are developed by national technical committees which are composed of different stakeholders consisting of educational and research institutes, governmental organizations, certification, inspection, and testing organizations, regulatory bodies, consumer association etc. The requirements and/or recommendations contained in Ethiopian Standards are consensus based that reflects the interest of the TC representatives and also of comments received from the public and other sources. Ethiopian Standards are approved by the National Standardization Council and are kept under continuous review after publication and updated regularly to take account of latest scientific and technological changes.

Orders for all Ethiopian Standards, International Standard and ASTM standards, including electronic versions, should be addressed to the Documentation and Publication Team at the Head office and Branch (Liaisons) offices). A catalogue of Ethiopian Standards is also available freely and can be accessed from our website.

 International Involvement IES, representing Ethiopia, is a member of the International Organization for Standardization (ISO), International Electro-technical Commission (IEC) and Codex Alimentarius Commission (CODEX). It also maintains close working relations with the American Society for Testing and Materials (ASTM). It is a founding member of the African Regional Organization for standardization (ARSO).

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