

**ETHIOPIAN
STANDARD**

First edition
2005-03-12

Corned beef — Specification

ICS: 67.120.10

Descriptors: agriculture products, food products, meat and meat products, specifications requirements, chemical, microbiological, hygienic packing, labeling, sampling.

Price based on 4 pages.

Reference number
ES 1112:2005

Foreword

This Ethiopian Standard has been prepared under the direction of Agricultural and Food Technology Technical Committee and published by the Quality and Standards Authority of Ethiopia (QSAE)

In the preparation this Ethiopian Standard references have been made to the following:

- Indian Standard 3044-1973, Specification for mutton and goat meat, curried and canned.
- Codex Alimentarius. Vol.1B, General requirements (Food hygiene) 2nd edition: 2001.
- South African Bureau of standards, SABS 885:1974, packaged meat products(processed or manufactured)

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

Corned beef — Specification

1 Scope

This Ethiopian Standard specifies the requirements of canned beef products designated as corned beef and sold in hermetically sealed containers which have been heat treated after sealing to such an extent that the product is shelf-stable.

2 Normative references

The following Ethiopian Standard contains provisions, which through reference to this text constitute provisions of this Ethiopian Standard. At the time of publication the editions indicated were valid. All standards are subject to revision, and possibility of applying the most recent editions of the Ethiopian Standard indicated below. Registers of currently valid standards are maintained in the Quality and Standards Authority of Ethiopia.

ES 298:2001, Edible salt specification

ES 359:2001, *General standard for the labeling of pre-packaged food.*

ES 577:2001, Recommended code of hygienic practice for food.

ES ISO 936:2004 Meat and meat products-Determination of total ash

ES ISO 937:2004, Meat and meat products-Determination of nitrogen content (Reference method)

ES ISO 2918, 2004, Meat and meat products-Determination of nitrate content (Reference method)

ES ISO 4831:2004, Microbiology- General guidance for the enumeration of coliforms- Most probable number technique.

ES ISO 4832:2002, Microbiology- General guidance for the enumeration of coliforms- colony count technique.

ES ISO 6391:2004, Meat and meat products- enumeration of *Escherichia coli* colony count technique at 44 °C using membranes

ES ISO 7937:2002, Microbiology of food and animal feeding stuffs- Horizontal method for the enumeration of *Clostridium perfringens*- colony count technique

ES ISO 6888-1:2002, Microbiology of food and animal feeding stuffs- Horizontal method for the enumeration of coagulase-positive staphylococci (*Staphylococcus aureus* and other species)- part 1; Technique using Baird-Parker agar medium.

ES ISO 6888-2:2002, Microbiology of food and animal feeding stuffs- Horizontal method for the enumeration of coagulase-positive staphylococci (*Staphylococcus aureus* and other species)- part 2; Technique using rabbit plasma fibrinogen agar medium.

ES ISO 6579:2002, Microbiology- General guidance on methods for the detection of salmonella

ES 1114, Recommended code of hygienic practice for processed meat products.

ES 1115:2005, Code of hygienic practice for fresh meat.

ES 1116:2005, Code of practice for ante-mortem and post mortem judgement of slaughter animals and meat

ES 1117:2005, Tin in canned foods Atomic absorption spectrophotometric method.

ES 988:2004, Arsenic in Food - Silver Diethyldithio carbamate method

3 Definitions-

For the purpose of this Final Draft Ethiopian Standard the following definitions shall apply.

3.1

Corned beef

Shall mean chopped, cured boneless meat from animals of bovine species and may include head meat, heart meat and skirt meat.

3.2

Hermetically sealed container

Shall mean a container which is completely sealed and impermeable and which is made of any appropriate material which is suitable for the product covered by the standard.

4 Requirements

4.1 Corned beef shall be prepared from coarsely cut beef which has been precooked or a mixture of such precooked beef to which a maximum of 5% raw beef has been added; in either case, the meat shall be cured before or after filling into the container.

Heat treatment shall be applied after the container is sealed and shall be sufficient to ensure that the product is shelf-stable and that it presents no public health hazard

The meat from which the product is prepared shall be of a quality suitable for human consumption and free from objectionable odours, flavours and with blood properly drained off.

4.2 The meat shall be free from bruises, blood clots, hemorrhage skin, tendons, ligament etc.

4.3 The meat shall be free from meat of other kinds, hairs and any other foreign matter.

4.4 The texture of canned meat shall not be sufficiently tender, but firm and shall contain 4 to 12 percent fat or connective tissue.

4.5 The tins shall be free from swells, perforations, pinholes, dust or rust distortion nail holes and other abnormal conditions.

4.6 Corned beef shall be prepared from parboiled meat.

4.7 The packing liquid shall be pure and clean and possess a neutral or slightly acidic reaction.

4.8 Curing ingredients shall consist of food grade potassium nitrate or common salt conforming to ES 298:2001.

4.9 The material shall be clean and substantially free from staining and contamination from the container. The meat shall be uniformly and thoroughly cured and the product shall be capable of being sliced, when chilled.

4.10 Corned beef shall satisfy the chemical requirements specified in the following table.

Table 1 — Chemical requirements for corned beef

No.	Characteristics	Requirements	Test methods
1	Total protein, % by mass min.	21	ES ISO 937
2	Ash, % by mass max.	3	ES ISO 936
3	Sodium nitrite, mg/kg	50	ES ISO 2918
4	Lead, as (Pb) mg/kg	1	ES 989
5	Arsenic, (As) mg/kg	1	ES 988
6	Tin, as (Sn) mg/kg	200	ES 1117

4.11 Corned beef shall also comply with the microbiological requirements specified in the table below.

Table 2 — microbiological requirements for corned beef

No.	Characteristics	Requirements	Test methods
1	Plate count / gram	2×10^{-5}	ES ISO 4833
2	Coliform / gram	Nil	ES ISO 4831, 4832
3	Clostridium perfringens / gram	Nil	ES ISO 7937
4	Staphylococcus / gram	Nil	ES ISO 6888-1, 6888-2
5	Salmonellae / gram	Nil	ES ISO 6579

5 Hygiene

5.1 Corned beef shall be processed in accordance with code of hygienic practice for processed meat ES 1114, General principles of food hygiene ES 577:2001 and Code of hygienic practice for fresh meat ES 1115:2004.

5.2 All meat used in the manufacture of corned beef shall have been subjected to the inspection processes prescribed in the code of hygienic practice for fresh meat ES 1115 and code of practice for ante-mortem and post-mortem judgement of slaughter animals and meat ES 1116. It shall have been passed by an inspector as fit for human consumption.

5.3 Meat shall not subsequent to being examined by an inspector, have been exposed to contamination or processed or handled or subjected to the addition of any harmful substance, which renders it unfit for human consumption.

5.4 Corned beef shall be handled, stored or transported in an establishment in a manner that will protect the corned beef from contamination and deterioration. Warm containers shall not be stacked so as to form incubatory conditions for the growth of thermophilic organisms.

5.5 Corned beef shall be packed in hermetically sealed containers, and shall be thermally processed.

5.6 Tins shall be kept dry during storage and transportation to prevent corrosion.

6 Packing and labelling

6.1 Packing

6.1.1 Corned beef shall be packed in cans under vacuum, which are coated on the inside with lacquer suitable for canned meat.

6.1.2 The cans and the lids used for packing shall be clean and maintained in the most hygienic conditions.

6.1.3 Cases and cartons shall be thoroughly dry. If they are made of wood it shall be well seasoned; and they shall be of the proper size so that the containers fit snugly and are not subject to damage from movement within the case. They shall be strong enough to withstand normal transport.

6.2 Labeling

6.2.1 Corned beef shall be labeled in accordance with ES 359:2001 prepackaged foods and shall contain the following information

- i) Name of the manufacturer;
- ii) Type of the product;
- iii) Batch or code number;
- iv) Storage instructions;
- v) Expiry date;
- vi) Net mass of the content.

7 Sampling

7.1 General

7.1.1 Samples shall be taken in a protected place not exposed to rain, dust or other foreign matters.

7.1.2 Samples shall be stored in such a manner that the temperature of the material does not vary unduly from the normal temperature.

7.2 Scale of sampling

7.2.1 Lot In any consignment, all the cases, containing cans of the same size and from the same batch of manufacture shall be grouped together to constitute a lot.

7.2.2 Samples shall be tested for each lot for ascertaining conformity of the material to the requirements of this specification.

7.2.3 The number of cans to be selected from the lot for testing the physical, microbiological and chemical requirements shall depend upon the size of the lot and shall be in accordance with the table below

Table 2 — Showing number of samples to be selected from the lot

Number of cans in the lot	Number of cans to be selected
Up to 200	4
201 to 500	5
501 to 800	6
801 to 1300	7
1301 to 3200	8
3201 to 8000	9
8001 and above	10