



Technical Specifications for the manufacture of:

CANNED BEEF

Specification reference: **Canned Beef**

Version: **1.0**

Date of issue: **30th March 2010**

1. SCOPE

This specification applies to **Canned Beef** distributed by WFP, processed by heat so as to prevent spoilage.

2. RAW MATERIALS

2.1 Beef

Canned Beef shall be manufactured from Halal, uncured, fresh or frozen beef. Only quality for human consumption can be used in mackerel canning.

2.2 Salt

Salt used for Canned Beef conforms to Codex Standard for Salt (CODEX STAN 150-1985, Rev. 1-1997).

2.3 Other ingredients and food additives

All other ingredients and food additive used for canning shall be of food grade quality and conform to all applicable Codex standards.

3. PROCESSING

Canned Beef shall be manufactured in accordance with:

- Codex Standard for Canned Beef (CODEX STAN 88-1981, REV. 1 – 1991);
- Code Practice for meat (CAC/RCP 58-2005)
- Recommended International Code of Hygienic Practice for Low-Acid and Acidified Low-Acid Canned Foods (CAC/RCP 23-1979);
- Recommended International Code of Practice: General Principles of Food Hygiene, CAC/RCP 1-1969 Rev 3 1997 Amended (1999) including Annex “Hazard Analysis and Critical Control Point (HACCP) System and Guidelines for its application”.

For compliance with Codex standards the processor must be able to demonstrate by principle and practice the adoption, implementation and recording of:

- Good Manufacturing Practice
- Hazard Analysis Critical Control Point program

In this context an appointed WFP Inspector / Quality Surveyor may be entitled to visit the factory without prior notice during any period when WFP product is being manufactured to check that the GMP and HACCP systems are in place. The Inspector / Quality Surveyor may request to see:

- **Records** (i.e. names of people in charge of the process and quality control, temperatures of the process, cleaning schedules, etc).
- **Procedures** (e.g. cleaning, personnel hygiene, HACCP, sampling and analysis).
- **Instructions** (e.g. process instructions, cleaning instructions).
- The **quality manual** for the process or factory.

The producer must be **registered under national food law** as a processor of foods for human consumption. In addition, the producer must have a **legal authorization** to produce this commodity in the country where the factory is located.

4. PRODUCT SPECIFICATIONS

4.1 General requirements

Canned Beef may not contain bone, ligament, gristle, hair, foreign matter or any additive, in particular thickening agents, other than tendon collagen of bovine origin.

Presentation when sliced must be a firm moulded product (15-30 mm pieces) containing a limited amount of minced meat.

Canned Beef shall have an odour, flavour and texture characteristic of the beef genus and shall not contain any objectionable odour, flavour and texture of any kind.

Moisture: 65% max

Protein: 13.0% min (the proportion of collagenous protein in relation to total protein content must not exceed 35 %).

Fat: 18% max

Ash: 2.5% max

4.2 Food additives

Food additives used in the **Canned Beef** shall not exceed the following levels:

Table 1: Limit of food additives in Canned Beef

Product	Maximum limit
Salt	3%
Sodium nitrite	100 mg/kg
Sugar	1%
Ascorbic acid	300 mg/kg
Starch	6% (Carbohydrate 8 %)

4.3 Microbiology

Microbiological contamination in the **Canned Beef** shall not exceed the following levels:

Table 2: Limit of microorganisms in Canned Beef

Microorganisms	Maximum limit (cfu/g)
Total of yeast and moulds	0
Total Coliform	0
Escherichia Coli	0
Salmonella	0
Staphylococcus aureus	0
Clostridium botulinum	0
Clostridium perfringens	0

4.4 Chemical contaminants and toxins

Contaminants and toxins in the **Canned Beef** shall not exceed the following levels:

Table 3: Limit of contaminants and toxins in Canned Beef

Item	Maximum limit (mg/kg)
Mercury (Hg)	0.03
Cadmium (Cd)	0.05
Lead (Pb)	1.0
Arsenic (As)	1.0
Tin (Sn)	200
Melamine	250
Para red	0
Rhodamine	0
Sudan red dyes (I, II, III and IV)	0

Canned Beef shall not contain pesticide residues in amounts which may represent a hazard to health.

4.5 Veterinary drugs residues

Veterinary drugs residues in **Canned Beef** shall not exceed the following levels:

Table 4: Limit of veterinary drugs residues in Canned Beef

Item	Maximum limit (mg/kg)
Tetracycline	0.1
Chloramphenicol	Not detected

4.6 Hormone residues

Hormone residues in **Canned Beef** shall not exceed the following levels:

Table 5: Limit of hormone residues in Canned Beef

Item	Maximum limit (mg/kg)
Diethylstilbestrol	0
Testosterol	0.015
Estadiol	0.0005

4.7 Shelf life

It shall retain above qualities for at least three years from date of manufacture when stored dry at ambient temperatures prevalent in the country of destination.

5. PACKAGING

Canned Beef can be packaged into 700-800g tin can to constitute the primary packaging. The secondary packaging is cartons to facilitate transportation and storage.

5.1 Tins

The metal containers (tins) must have been externally coated with varnish or have undergone a treatment offering equivalent guarantees and must be completely filled and hermetically sealed.

Internal tin coating mass: 8.4- 11.2g/m²

External tin coating mass: 2.8- 11.2g/m²

5.2 Carton

They should be new, strong cardboard cartons containing from from 12 to 24 tins.

Cartons should be manufactured from well constructed single wall, luted paper, corrugated board with a specific weight of approximately 750g per square meter. This specific weight corresponds to a carton weight of approximately 560g for golding.

- Cartons should have burst strength (edge crush test) of approximately 44 pounds per square inch or 3.2 kg/ cm² or equivalent.
- Carton seams should be glued.
- Substance of cartons 275-120-275 (750g per m²).

Dunnage of strong sheets, plywood has to be placed inside each container at every three layer of cartons to provide the required stacking strength.

6. MARKING

6.1 On tins

The following information should be available on tins:

- Name of the product
- Net weight
- Name of production enterprise (including country of origin)
- Batch number
- Production date
- Expiry date
- Additional marking as per contractual agreement

6.2 On cartons

The following information should be available on each carton: (optional)

- Name of the product
- Number of tins per carton
- Net weight / can
- Name and address of the supplier (including country of origin)
- Production date – (it is printed on the tin can)
- Expiry date – (it is printed on the can)
- Additional marking as per contractual agreement (as a sticker on the can)

7. STORING

Canned Beef must be stored under dry, ventilated and hygienic conditions.

8. ANALYTICAL REQUIREMENTS

No	Item	Limit	Method
Nutrition value			
1	Moisture	65% max	AOAC 950.46
2	Protein	13.0% min	AOAC 992.15
3	Fat	18% max	AOAC 960.39
4	Ash	2.5% max	AOAC 920.153
5	Organoleptic (texture, color, smell, taste)		
Food additives		<i>Max</i>	
6	Salt	3%	AOAC 935.47
7	Sodium nitrite	100 mg/kg	ISO/DSI 2918
8	Carbonhydrates	8%	By difference: % CHO= 100%- (%moisture+ % protein+% fat+% ash)
9	Ascorbic acid	300 mg/kg	AOAC 967.22
10	Starch	6 %	AOAC 996.11
Can			
11	Net weight	700/800g	CODEX STAN 119 - 1981, REV. 1 – 1995
12	Incubation test		
13	Seam check (vacuum, seam thickness, seam length, countersink depth, cover hook, body hook, actual overlap, % overlap, body hook butting, free space, tightness)		
Microbiology		<i>Max (CFU/g)</i>	
14	Total of yeast and moulds	0	AOAC 997.02
15	Total coliforms	0	ISO 4831 : 1993
16	Escherichia Coli	0	AOAC 986.33
17	Salmonella	0	ISO 6888 : 1993
18	Staphylococcus aureus	0	AOAC 2003.07
19	Clostridium botulinum	0	AOAC 977.26
20	Clostridium perfringens	0	ISO 7937: 1985
Chemical contaminants and toxins		<i>Max (mg/kg)</i>	
21	Cadmium (Cd)	0.05	AOAC 945.58
22	Lead (Pb)	0.5	AOAC 934.07
23	Tin (Sn)	250	AOAC 985.16
24	Sudan red dyes (I, II, II and IV)	0	HPLC or LC-MS/MS
Veterinary drugs residues		<i>Max (mg/kg)</i>	
25	Tetracycline	0.1	AOAC 995.09
26	Chloramphenicol	Not detected	ISO 13493: 1998
Hormone residues		<i>Max (mg/kg)</i>	
27	Diethylstilbestrol	0	AOAC 956.10