

Bacon— Specification

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Kenya Industrial Research and Development Institute
National Public Health Laboratory
Government Chemist's Department
Farmer's Choice (K) Ltd.
University of Nairobi — Department of Food Science, Nutrition and Technology
Consumer Information Network
Kenchic (K) Ltd.
Kenya Meat Commission
Directorate of Livestock Production
Directorate of Veterinary Services
Kenya Nut Company- Morendat farm
Meat Training institute
Choice Meats limited
Kenya Bureau of Standards — Secretariat

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Foreword

This Kenya Standard was prepared by the Meat and poultry Products Technical Committee under the guidance of the Standards Projects Committee, and it is in accordance with the procedures of the Kenya Bureau of Standards.

Bacon consumption has been rising steadily in the world, Kenya included. Due to changing food habits and world trends, bacon plays an important role in human food and nutrition security as one of the convenient foods. Bacon is traditionally prepared from pork. However, its processing has evolved to include other types of meats. It is therefore critical to assure consumers of quality and safety of bacon and hence the preparation of the second edition of the standard so as to align it with current advances in science.

During the preparation of this standard, reference was made to the following documents:

IS 2475:1979 (R2000), Specification for smoked bacon.

ICMS Book 8.

Acknowledgement is hereby made for the assistance derived from these sources.

Bacon — Specification

1. Scope

This standard specifies the quality and safety requirements, methods of sampling and test for bacon.

2. Normative references

The following 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.

- I. *KS 2761, Meat Hygiene — Code of practice*
- II. *KS EAS 12, Portable Water — Specification*
- III. *KS EAS 35, Edible salt — Specification*
- IV. *KS EAS 38, Labelling of prepackaged foods — Specification*
- V. *KS EAS 39, Hygiene in the food and drink manufacturing industry — Code of practice*
- VI. *KS ISO 6579, Microbiology of food and animal feeding stuffs — Horizontal method for the detection of Salmonella spp.*
- VII. *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*
- VIII. *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*
- IX. *British standards EN14332, 14627, 14082, 14083, 14084*
- X. *Association Of Official Analytical Chemists AOAC 999.10, 999.11, 973.34, 986.15, 971.21*
- XI. *Codex Alimentarius Commission CAC/MRL 2 Maximum Residue Limits for Veterinary Drugs in Food*
- XII. *CAC/RCP 68-2009 Code Of Practice For The Reduction Of Contamination Of Food With Polycyclic Aromatic Hydrocarbons (PAH) From Smoking And Direct Drying Processes*
- XIII. *Food, Drugs and Chemical Substances Act Cap 254.*
- XIV. *Public Health Act CAP 242*
- XV. *Codex Stan192 codex general standard for food additives (GSFA)*
- XVI. *KS ISO 16649*
- XVII. *KS ISO 6579*
- XVIII. *KS ISO 11290-1*

3. Definition

- 3.1. **Meat** - is all parts of an animal that are intended for, or have been judged as safe and suitable for human consumption
- 3.2. **Bacon** - is a cured meat product traditionally derived from pork belly. If meat from other portions of the carcass or other food animal is used, the product name must be qualified to identify the portions. E.g "Pork Shoulder Bacon."
- 3.3. **Streaky bacon** - made from the belly of a pig and is very fatty with long veins of fat running parallel to the rind. It is also called "streaky rashers."
- 3.4. **Beef bacon** - is a cured beef product sliced to resemble regular bacon. It is prepared from various beef cuts and offered with a variety of coined names, including "Breakfast Beef," "Beef Bacon," etc
- 3.5. **Pancetta** - Italian streaky bacon, smoked or green (unsmoked), with a strong flavour. It is usually
- 3.6. cured in salt and spices and then air-dried
- 3.7. **Green weight** - the weight of fresh pork bellies, normally skinned and trimmed, prior to pumping with curing solution
- 3.8. **Finished weight** - the final weight of cured pork bellies after processing. The weight of cured pork bellies ready for slicing and labeling as "Bacon" shall not exceed the weight of the fresh, uncured pork bellies (green weight)
- 3.9. **Ready-to-eat** - Products that are intended to be consumed without any further biocidal steps.

4. Requirements

4.1. General

- 4.1.1. The food animal from which the bacon is derived shall be slaughtered in a hygienically managed slaughter-house and subjected to ante-mortem and post-mortem examination according to the procedure prescribed in KS 2761.
- 4.1.2. The meat from which the product is prepared shall be of a quality suitable for human consumption and free from objectionable odours.
- 4.1.3. The product shall be prepared, handled and delivered under hygienic conditions.
- 4.1.4. The product shall be prepared in a facility which is complying with KS EAS 39.
- 4.1.5. Bacon shall be free from foreign matter and discoloration

4.2. Raw material requirements

4.2.1. Meat

- 5.1.1. Meat shall be derived from animals slaughtered in a hygienically managed slaughter house complying with KS 2761.
- 5.1.2. Salt used shall be complying with KS EAS 35
- 5.1.3. Nitrites used shall be complying with the Food, Drugs and Chemical Substances Act, Cap. 254 of the Laws of Kenya and Codex GSFA.

4.2.2. Optional Ingredients

All optional ingredients used shall be of food grade quality and conform to applicable Kenyan Standards.

- 4.2.2.1. Sucrose, invert sugar, dextrose (glucose), lactose, maltose, glucose syrup (including corn syrup).

4.2.2.2. Spices, seasonings and flavorings complying with respective Kenya Standards.

4.2.3. Food additives used in bacon shall be complying with the Food, Drugs and Chemical Substances Act, Cap. 254 of the Laws of Kenya and Codex GSFA.

4.2.4. Smoking shall be done according to the Code Of Practice For The Reduction Of Contamination Of Food With Polycyclic Aromatic Hydrocarbons (PAH) From Smoking And Direct Drying Processes CAC/RCP 68-2009

5. Hygienic requirements

- 5.1. Bacon shall be prepared, handled and stored in accordance with the appropriate sections of KS EAS 39 and KS 2761
- 5.2. All workers shall use appropriate personal protective equipment that does not contaminate the product.
- 5.3. All workers shall undergo a food handlers test before their deployment and every so often as per the Public Health Act Cap 242 and Food, Drugs and Chemical substances Act Cap 254.
- 5.4. Necessary precautions shall be taken to prevent incidental contamination of the product from soiled and/or dirty equipment or from persons suffering from injuries.
- 5.5. All equipment coming into contact with raw material or product in the course of manufacture shall be kept clean.
- 5.6. Adequate supply of running potable water that complies with EAS 12 and/or steam/boiling water, brushes, and other equipment necessary for proper cleaning of machinery/equipment shall be available.
- 5.7. The equipment shall be cleaned, sanitised and/or disinfected using an appropriate food grade agent or with hot water at a temperature above 82 °C.

6. Safety Requirements

Microbiological limits

Bacon shall not contain any pathogenic organisms and shall comply with microbiological limits given in Table 1.

Table 1 — Microbiological limits for Bacon

SL No.	Type of organisms	Max	Test method
I.	<i>E.coli</i> *	10 ²	KS ISO 16649-2
II.	<i>E. coli</i> 0157:H7	Absent	KS ISO 16649-2
III.	<i>Salmonella</i> spp	Absent per 25g	KS ISO 6579
IV.	<i>Listeria monocytogenes</i>	Absent per 25g	KS ISO 11290-1
V.	<i>Coagulase positive Staphylococcus aureus</i> *	≤20cfu/g	KS ISO 6888-1
VI.	<i>Moulds</i> cfu/g	10 ²	KS ISO 21527-2
VII.	<i>Clostridium Perfringens</i>	absent	Ks ISO 7937

For ready to eat bacon, it shall be absent.

7. Meat Identification

The identification/isolation of meat used in bacon shall be done according to the Polymerase Chain Reaction test as per KS 2763 or any other validated test method

8. Veterinary drugs residues

Bacon shall comply with the maximum residue limits specified in CAC/MRL 2- Maximum Residue Limits for Veterinary Drugs in Food. When analyzed by the appropriate approved methods, the products shall not contain any antibiotics above the approved limits.

9. Limits for heavy metal contaminants

Bacon shall not contain heavy metal contaminants in excess of the limits given in Table 2.

Table 2 — Limits for heavy metal contaminants in Bacon

SL No.	Heavy Metals	Maximum limits Ppm	Test methods
I.	Arsenic (Ar)	0.1	AOAC 986.15 EN14332, 14627
II.	Lead (Pb)	0.1	AOAC 999.10, 999.11, 986.15 EN14082, 14083,14084
III.	Cadmium	0.05	AOAC 986.15, 999.11,973.34 EN 14082,18083,14084
IV.	Mercury	0.03*	AOAC 971.21

10. Packaging and labelling

9.1. Packaging

Packaging shall be done in food grade packaging materials that protect the product from any physical, microbiological, chemical or any other type of contamination during handling, storage and distribution.

The packages shall be able to withstand the rigors of handling and transportation and shall not be exposed to direct sun or rain.

9.2. Labelling

Labelling of packages shall be done in accordance with the requirements stipulated in EAS 38, Labelling of pre-packaged food and shall include the following:

1. Description /Name of the product as appropriate
2. List of ingredients in descending order
3. Allergens declaration
4. Name, location and address of manufacturer
5. Net weight, in metric units
6. Declaration as “raw” product, or ready to eat
7. Date of manufacture
8. Expiry date
9. Batch number
10. Instructions for use (must inform the end-user to cook the product for e recommended period of time before consumption)
11. Storage conditions and temperature of storage
12. Country of origin or “Made in Kenya” for locally manufactured products.

10. Sampling for microbial analysis

Samples shall be taken from processing, storage areas, equipment used in food production or at point of sale, when such sampling is necessary for ensuring that the criteria are met. Sampling shall be done in accordance with ISO 18593 as a reference method.