Breakfast cereals — Specification

Part 2:

Flaked/puffed cereals (ready-to-eat)
TECHNICAL COMMITTEE REPRESENTATION

The following organizations were represented on the Technical Committee:

- Ministry of Public Health & Sanitation — Department of Public Health
- Ministry of Medical Services — Division of Nutrition
- Consumer Information Network
- National Cereals and Produce Board
- Breakfast Cereal Ltd.
- Nestle Kenya Ltd
- Government Chemist’s Department
- Egerton University
- Ministry of Industrialization — Department of Industry
- Unga Ltd.
- Proctor and Allan Ltd.
- Jambo Biscuits (K) Ltd.
- Capwell Industries
- Pembe Flour Mills
- Kenyatta National Hospital – Department of Nutrition and Dietetics
- Kenya Bureau of Standards — Secretariat

REVISION OF KENYA STANDARDS

In order to keep abreast of progress in industry, Kenya Standards shall be regularly reviewed. Suggestions for improvements to published standards, addressed to the Managing Director, Kenya Bureau of Standards, are welcome.
Breakfast cereals — Specification

Part 2:

Flaked/puffed cereals (ready-to-eat)
DKS 523-2: 2010

Foreword

This Third Edition of this Kenya Standard was prepared by the Processed Cereals and Pulses Technical Committee under the guidance of the Standards Project Committee, and it is in accordance with the procedures of the Kenya Bureau of Standards.

Breakfast cereal foods can be classified based on either the amount of time required for domestic cooking, the form of the breakfast cereal or the cereal used as a raw material. The types that require no cooking are called ready-to-eat cereals and these are available in a variety of forms. These ready-to-eat cereals are usually consumed with milk or water and with or without added sugar.

This part of this Kenya Standard was revised to expand the scope and ensure that it accommodates all the breakfast cereals in the category of faked and puffed as well as the natural breakfast cereals (Muesli). The requirements were updated in line with the available scientific developments as well as the best industrial practices.

This Edition therefore cancels and replaces the third edition of KS 523 part 2.

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

- Breakfast cereals technology — By Roger Daniels — (Food technology review No. 11).
- Encyclopaedia Britannica: Knowledge in depth, Vol. 3 (page 1171).
- KS 05-40 Labelling of pre-packaged foods (Parts 1 and 2).
- FDA — Federal Rules Register, Vol. 39, No. 11 — USA.

Acknowledgement is hereby made for the assistance derived from these sources
Breakfast cereals — Specification

Part 2:

Flaked/puffed cereals (ready-to-eat)

1 Scope
This Draft Kenya Standard prescribes the requirements for flaked/puffed breakfast cereals, which are ready-to-eat.

2 General requirements

2.1 The cereal flakes/puffs shall be prepared from clean, sound grains, e.g. corn, wheat or rice, which complies with respective Kenya Standards.

2.2 If the cereal flakes/puffs are prepared from cereal flour, the flour used shall be of good quality and complying with various Kenya Standards on cereal flours.

2.3 The flakes/puffs shall be tender, crispy, and reasonably uniform in size and of good flavour and colour.

2.4 The cereal flakes/puffs shall possess a good characteristic taste and odour and shall be free from rancid, musty, sour and other undesirable tastes and odours.

2.5 The flakes/puffs shall be free from insects and foreign matters.

2.6 When immersed in milk or water the product shall absorb the liquid and swell substantially, presenting a pleasant texture and taste. This will not apply to breakfast cereal bars.

2.7 The wheat flaked biscuits shall be of good flavour, colour and of uniform size and design within the group. The product shall not be soggy.

2.8 The Clauses 2.3, 2.4, 2.5, 2.6 and 2.7 shall be determined by sensory evaluation panels.

2.9 Nutrition and Health claims
Any Health and/or Nutrition claim on breakfast cereal products shall conform to the provisions of KS CAC/GL 23 Guidelines for nutrition and health claims.

3 Compositional requirements
The cereal flakes/puffs and flaked cereal biscuits (ready-to-eat) shall comply with the requirements given in Tables 1
Table 1: Compositional & Quality requirements of flaked/puffed cereals {per 100g}

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Requirement (%)</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (Max)</td>
<td>7.5&lt;sup&gt;a&lt;/sup&gt;</td>
<td>KS 523 - 1</td>
</tr>
<tr>
<td>Protein min.) N x 6.25</td>
<td>5.0</td>
<td></td>
</tr>
<tr>
<td>Total Fat Max</td>
<td>8&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>Total Ash Max</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Acid Insoluble Ash Max</td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>Total Fibre Max</td>
<td>12&lt;sup&gt;c&lt;/sup&gt;</td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> The maximum moisture content of muesli shall be 12 %

<sup>b</sup> The maximum fat content of cereal bars shall be 14 %

<sup>c</sup> Muesli and wheat bran shall have a minimum fibre content of 12 %

Note: It is recommended that the fat content of corn flakes/puff should not exceed 4 %.

4 Hygiene

4.1 Premises

The flaked/puffed cereals shall be prepared and packaged in the premises built and maintained under hygienic conditions in accordance with the Public Health Act, Cap. 242, the Food, Drugs and Chemical Substances Act, Cap. 254 of the Laws of Kenya and DKS 05-1500, Code of Practice for hygiene in the food and drink manufacturing industry.

4.2 Microbiological requirement

The flaked/puffed cereals shall comply with the microbiological limits given in Table 5.

Table 2 — Microbiological Limits

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Requirement</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coliform bacteria count/g</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Salmonella sp. count/g</td>
<td>Shall be absent</td>
<td></td>
</tr>
<tr>
<td>Escherichia coli count/g</td>
<td>Shall be absent</td>
<td></td>
</tr>
<tr>
<td>Staphylococcus aureus/30 g</td>
<td>Shall be absent</td>
<td></td>
</tr>
<tr>
<td>Mould/yeast per gram</td>
<td>&lt; 50</td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> Method of microbiological examination of foods.

4.3 The flaked/puffed cereals shall not exceed total aflatoxins of 10 ppb and 5 ppb for aflatoxins B1.
5 Contaminants
Flaked/puffed cereals shall comply with KS CODEX STAN 193:2005. In addition, the products shall comply with Table 2 below.

Table 6 — Heavy metal contaminants limits

<table>
<thead>
<tr>
<th>Contaminants</th>
<th>Limits in ppm</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic (As), max.</td>
<td>1.0</td>
<td>AAS</td>
</tr>
<tr>
<td>Lead (Pb), max.</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>Copper (Cu) max.</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>Cadmium</td>
<td>0.2</td>
<td></td>
</tr>
</tbody>
</table>

6 Packaging
6.1 The flaked/puffed cereals (ready-to-eat) shall be packed in well-sealed moisture proof food grade containers, which will protect the product from deterioration in quality and safety throughout the shelf life.

6.2 The fill of the container shall be packaged in accordance to the Weights and Measures Act, Cap. 513 of the Laws of Kenya.

7 Labelling
The labelling of the flaked/puffed cereals shall comply with KS 05-40, labeling of pre-packaged foods. In addition, the following information shall be legibly and indelibly marked on the container:

i) Name of the product;

ii) Brand name/ trade name;

iii) Name, location and physical address of the manufacturer;

iv) Country of origin;

v) Ingredients in descending order of proportions;

vi) Declaration of the nutritional information;

vii) Date of manufacture;

viii) Expiry date;

ix) Storage condition;

x) Net weight.