Bee pollen — Specification
Compliance with this standard does not, of itself confer immunity from legal obligations

A Uganda Standard does not purport to include all necessary provisions of a contract. Users are responsible for its correct application.
National foreword

Uganda National Bureau of Standards (UNBS) is a parastatal under the Ministry of Trade, Industry and Cooperatives established under Cap 327, of the Laws of Uganda, as amended. UNBS is mandated to coordinate the elaboration of standards and is
(a) a member of International Organisation for Standardisation (ISO) and
(b) a contact point for the WHO/FAO Codex Alimentarius Commission on Food Standards, and
(c) the National Enquiry Point on TBT Agreement of the World Trade Organisation (WTO).

The work of preparing Uganda Standards is carried out through Technical Committees. A Technical Committee is established to deliberate on standards in a given field or area and consists of representatives of consumers, traders, academicians, manufacturers, government and other stakeholders.

Draft Uganda Standards adopted by the Technical Committee are widely circulated to stakeholders and the general public for comments. The committee reviews the comments before recommending the draft standards for approval and declaration as Uganda Standards by the National Standards Council.

This Draft Uganda Standard, DUS DEAS 989: 2019, Bee pollen — Specification, is identical with and has been reproduced from an East African Standard, DEAS 989: 2019, Bee pollen — Specification, and is being proposed for adoption as a Uganda Standard.

The committee responsible for this document is Technical Committee UNBS/TC 2, Food and agriculture.

Wherever the words, “East African Standard” appear, they should be replaced by ”Uganda Standard.”
Bee pollen — Specification
Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in the East African Community. It is envisaged that through harmonized standardization, trade barriers that are encountered when goods and services are exchanged within the Community will be removed.

The Community has established an East African Standards Committee (EASC) mandated to develop and issue East African Standards (EAS). The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the public and private sector organizations in the community.

East African Standards are developed through Technical Committees that are representative of key stakeholders including government, academia, consumer groups, private sector and other interested parties. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the Principles and procedures for development of East African Standards.

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

The committee responsible for this document is EASC/TC 011, Apiary and apiary products. Attention is drawn to the possibility that some of the elements of this document may be subject of patent rights. EAC shall not be held responsible for identifying any or all such patent rights.
Bee pollen — Specification

1 Scope

This Draft East African Standard specifies the requirements, sampling and test methods for bee pollen intended for human consumption.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

AOAC Official method 923.03 Ash in flour

AOAC Official method 985.16 for determination of Tin in canned foods — Atomic absorption spectrophotometric method

AOAC 999.11 Determination of Lead, Cadmium, Copper, Iron, and Zinc in Foods

CAC/GL/50, General guidelines on sampling

EAS 38, Labelling of pre-packaged food general requirement

EAS 39, Hygiene in the food and drinks manufacturing industry — Code of practice

EAS 804, Claims on food — General requirements

EAS 805, Use of nutrition and health claims — Requirements

ISO 1666, Starch — Determination of moisture content — Oven-drying method

ISO 3947, Starch, native or modified determination of fat content

ISO 4833-1 Microbiology of the food chain — Horizontal method for the enumeration of microorganisms — Part 1: Colony count at 30 degrees C by the pour plate technique

ISO 6579, Microbiology of food and feeding stuffs — Horizontal method for the detection of salmonella spp

ISO 6634, Fruits, vegetables and derived products — Determination of arsenic content — Silver diethyldithiocarbamate spectrophotometric method

ISO 6888-2, 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

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

ISO 16634-2, Food products — Determination of the total nitrogen content by combustion according to the Dumas principle and calculation of the crude protein content — Part 2: Cereals, pulses and milled cereal products

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1 bee pollen
the result of the agglutination of pollens collected by worker bees from flowers, with nectar (and/or honey) and salivary substances

3.2 impurities
any material which is not characteristic to the product including bee stings, bee wings, sand and stones

4 Types of bee pollen

4.1 Fresh bee pollen
Pollen collected in the original form, with water content between 20-30 %. Storage of such pollen should be in a freezer to avoid bacterial and mould contamination.

4.2 Dessicated bee pollen
Pollen processed through drying at temperatures not higher than 42°C, with maximum water content of 6%.

4.3 Monofloral bee pollen
The pollen from the major taxon need to be not less than 80% (different taxa can be used for specific nutritional and therapeutic purposes)

4.4 Multifloral bee pollen
A mixture of pollen from different taxa where no taxon constitutes more than 80 %

5 Requirements

5.1 General requirements
Bee pollen shall;

  a) have characteristic appearance, colour, taste, odour and flavour depending on floral source;
b) not have any defects like; off-odour and taste, moulds, fermented, rancid; and

c) not contain impurities such as live or dead insects, larvae or eggs, propolis, wax, plant particles, soil, sand or any other matter which is not characteristics to the product.

5.2 Specific requirements

Bee pollen shall also comply with the requirements given in Table 1 when tested in accordance with the test methods prescribed therein.

### Table 1— Specific requirements for bee pollen

<table>
<thead>
<tr>
<th>S/N</th>
<th>Parameter</th>
<th>Requirement/Limit</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td>i)</td>
<td>Moisture, g/100 g, max.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-Fresh bee pollen</td>
<td>30</td>
<td>ISO 1666</td>
</tr>
<tr>
<td></td>
<td>-Desiccated bee pollen</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>ii)</td>
<td>Carbohydrates, g/100 g, min.</td>
<td>13</td>
<td>ISO 10520</td>
</tr>
<tr>
<td>iii)</td>
<td>Fat content, g/100 g, min.</td>
<td>15</td>
<td>ISO 3947</td>
</tr>
<tr>
<td>iv)</td>
<td>Protein content, g/100 g, min.</td>
<td>15</td>
<td>ISO 16634-2</td>
</tr>
<tr>
<td>v)</td>
<td>Ash, g/100 g, max.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-Total ash</td>
<td>6</td>
<td>AOAC 923.03</td>
</tr>
<tr>
<td></td>
<td>-Acid insoluble ash</td>
<td>0.3</td>
<td></td>
</tr>
</tbody>
</table>

6 Heavy metal contaminants

Bee pollen shall be free from heavy metals in amounts which may represent a hazard to human health and shall conform to the limits specified in Table 2 when tested in accordance with the test methods prescribed therein.

### Table 2 — Heavy metal contaminant limits for bee pollen

<table>
<thead>
<tr>
<th>S/N</th>
<th>Heavy metal</th>
<th>Limit mg/kg, max.</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td>i)</td>
<td>Arsenic</td>
<td>1.0</td>
<td>ISO 6634</td>
</tr>
<tr>
<td>ii)</td>
<td>Lead</td>
<td>0.5</td>
<td>AOAC 999.11</td>
</tr>
<tr>
<td>iii)</td>
<td>Tin</td>
<td>5.0</td>
<td>AOAC 985.16</td>
</tr>
<tr>
<td>iv)</td>
<td>Cadmium</td>
<td>0.01</td>
<td>AOAC 999.11</td>
</tr>
<tr>
<td>v)</td>
<td>Mercury</td>
<td>0.03</td>
<td>AOAC 999.11</td>
</tr>
</tbody>
</table>

7 Hygiene

Bee pollen shall be processed and handled in hygienic manner in accordance with the EAS 39 and shall comply with the microbiological limits stipulated in Table 3 when tested in accordance with test methods specified therein.
Table 3 — Microbiological limits for bee pollen

<table>
<thead>
<tr>
<th>S/N</th>
<th>Type of micro-organism</th>
<th>Limit</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td>i)</td>
<td>Total Plate Count (mesophylic), cfu/g max.</td>
<td>$10^3$</td>
<td>ISO 4833-1</td>
</tr>
<tr>
<td>ii)</td>
<td>Yeast and moulds, cfu/g, max</td>
<td>$10^2$</td>
<td>ISO 21527-2</td>
</tr>
<tr>
<td>iii)</td>
<td><em>E. coli</em>, MPN/g</td>
<td>Absent</td>
<td>ISO 7251</td>
</tr>
<tr>
<td>iv)</td>
<td><em>Staphylococcus aureus</em></td>
<td>Absent</td>
<td>ISO 6888-2</td>
</tr>
<tr>
<td>v)</td>
<td><em>Salmonella spp</em>, per 25 g</td>
<td>Absent</td>
<td>ISO 6579-1</td>
</tr>
</tbody>
</table>

8 Packaging

Bee pollen shall be packaged in a food grade material that protects the integrity and safety of the product.

9 Weights and measures

The volume and fill of the container shall comply with weights and measures regulations in the respective partner state.

10 Labelling

In addition to the labelling requirements given in EAS 38, the package shall be legibly and indelibly marked with the following information:

a) name of the product as “Bee pollen”;

b) form of the product: “Fresh” or “Desiccated”;

c) name, location and physical address of the processor/packer;

d) instructions for use;

e) warning: “This product may cause allergic reactions”

f) country of origin;

g) date of packaging;

h) best before;

i) instructions for storage;

j) net content in SI unit; and

k) batch/lot number.

11 Nutritional and health claims

Any nutritional and health claims associated with this product shall be in accordance with EAS 805 and shall follow nutritional labelling concepts in accordance with EAS 804.
12 Sampling

Sampling of bee pollen shall be done in accordance with CAC/GL 50.