

**ICS 67.180.10**

**DMS 366:2021**  
Second edition

**DRAFT MALAWI STANDARD  
COMESA/SADC HARMONISED**

**Honey – Specification**

**Note: This is a draft Malawi standard and shall neither be regarded nor used as a Malawi standard**

# Honey – Specification

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## FOREWORD

This draft Malawi standard has been prepared by MBS/TC 70, the Technical Committee on *Apiculture products* to provide requirements for Honey.

This draft Malawi standard is the first revision of MS 366:2010. This draft Malawi standard is technically equivalent to the COMESA harmonized standard and SADC harmonized standard SADC HT: 108:2022 based on Codex Standard, CXS: 12-1981,( Rev.1 (1987), Rev.2 (2001), *Standard for Honey*.

Acknowledgement is made for the use of the information.

## TECHNICAL COMMITTEE

This draft Malawi standard was prepared by MBS/TC 70, the Technical Committee on *Apiculture products* and the following organisations and institutions were consulted:

Blantyre District Health Office;  
Bvumbwe Agriculture Research Station;  
Lilongwe University of Agriculture and Natural Resources;  
Malawi University of Business Studies and Applied Sciences;  
Ministry of Industry;  
Mzuzu Coffee;  
Natural Herbal Foods;  
Nyika honey;  
Peoples Trading Centre;  
Shoprite trading Consumer Association of Malawi;  
Small and Medium Enterprise Development Institute;  
Tapika food products.

## NOTICE

*This standard shall be reviewed every five years, or earlier when it is necessary, in order to keep abreast of progress. Comments are welcome and shall be considered when the standard is being reviewed*

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**DRAFT MALAWI STANDARD**

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**Honey – Specification**

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**1 SCOPE**

This draft Malawi standard applies to all honeys produced by honey bees and covers all styles of honey presentations, which are processed and ultimately intended for direct consumption. It also applies to honey used as an ingredient in other foods and honey, which is packed for sale in bulk containers, which may be repacked into retail packs.

**2 NORMATIVE REFERENCES**

The following standards contain provisions, which through reference in this text, constitute provisions of this standard. All standards are subject to revision and since any reference to a standard is deemed to be a reference to the latest edition of that standard, parties to agreements based on this standard are encouraged to take steps to ensure the use of the most recent edition of the standard indicated below. Information on current valid national and international standards can be obtained from the Malawi Bureau of Standards.

MS 19: *Labeling of prepacked foods – General standard;*

MS 21: *Code of hygienic conditions for food and food processing units;*

MS 302: *Contaminants and toxins in foods – General standard;*

MS 801: *Honey– Methods of test;*

AOAC Official Method 977.26: *Clostridium botulinum and its toxins in foods. Microbiological method;*

ISO 6579-1: *Microbiology of the food chain – Horizontal method for the detection, enumeration and serotyping of Salmonella – Part 1: Detection of Salmonella spp;*

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 7937: *Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of Clostridium perfringens – Colony-count technique; and*

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.*

**3 TERMS AND DEFINITIONS**

For the purpose of this draft Malawi standard, the following terms and definitions shall apply:

**3.1****honey**

the natural sweet substance produced by honey bees from the nectar of plants or from secretions of living parts of plants or excretions of plant sucking insects on the living parts of plants, which the bees collect, transform by combining with specific substances of their own, deposit, dehydrate, store and leave in the honey comb to ripen and mature

**3.2****blossom/nectar honey.**

honey, which comes from nectars of plants

**3.3****honeydew honey**

honey the honey which comes mainly from excretions of plant sucking insects (*Hemiptera*) on the living parts of plants or secretions of living parts of plants

### 3.4

#### **filtered honey**

honey which has been filtered in such a way as to result in the significant removal of pollen

## 4 ESSENTIAL COMPOSITION AND QUALITY FACTORS

### 4.1 Product description

Honey consists essentially of different sugars, predominantly fructose and glucose as well as other substances such as organic acids, enzymes and solid particles derived from honey collection. The colour of honey varies from nearly colourless to dark brown. The consistency can be fluid, viscous or partly to entirely crystallised. The flavour and aroma vary, but are derived from the plant origin.

### 4.1 General requirements

**4.1.1** Honey sold as such shall not have added to it any food ingredient, including food additives, nor shall any other additions be made other than honey. Honey shall not have any objectionable matter, flavour, aroma, or taint absorbed from foreign matter during its production, harvesting, transportation, processing and storage. The honey shall not have begun to ferment or effervesce.

**Note:** It is advisable to avoid installing beehives near industries handling sugar or sweet waste, since bees can bring back to the hive other sugars than those of nectar and honey dew.

**4.1.2** Honey shall not be heated or processed to such an extent that its essential composition is changed and/ or its quality is impaired.

**4.1.3** Chemical or biochemical treatments shall not be used to influence honey crystallisation.

### 4.2 Organoleptic properties

#### 4.2.1 Colour

The colour of honey varies from nearly colourless to dark brown. No objectionable taint.

#### 4.2.2 Consistency

Fluid, viscous or partly to entirely crystallised. The honey shall not have begun to ferment or effervesce.

#### 4.2.3 Flavour

The flavour and aroma vary, but are derived from the plant origin. No objectionable flavour, aroma.

#### 4.2.4 Foreign matter

Honey shall not have any foreign matter during its processing and storage.

**Note:** No pollen or constituent particular to honey may be removed except where this is unavoidable in the removal of foreign inorganic or organic.

### 4.3 Specific requirements

Honey shall conform to the chemical requirements prescribed in **Table 1**.

**Table 1: Compositional requirements for honey**

S/N	1	2	3
	Parameter	Requirement	Test Method
1	<b>Moisture content</b>		MS 801
	Honeys not listed below	not more than 20%	
	Heather honey ( <i>Calluna</i> )	not more than 23%	
2	<b>Sugar content</b>		MS 801
	<b>Fructose and Glucose Content (sum of both)</b>		
	a) Honey not listed below	not less than 60 g/100g	
	b) Honeydew honey, blends of honeydew honey with blossom honey	not less than 45 g/100g	
	<b>Sucrose content</b>		
	a) Honey not listed below	not more than 5 g/100g	
	b) Alfalfa ( <i>Medicago sativa</i> ), Citrus spp., False Acacia ( <i>Robinia pseudoacacia</i> ), French Honeysuckle ( <i>Hedysarum</i> ), Menzies Banksia ( <i>Banksia menziesii</i> ), Red Gum ( <i>Eucalyptus camaldulensis</i> ), Leatherwood ( <i>Eucryphia lucida</i> ), Eucryphia milligani	not more than 10 g/100g	
c) Lavender ( <i>Lavandula spp</i> ), Borage ( <i>Borago officinalis</i> )	not more than 15 g/100g		
3	<b>Water Insoluble Solids Content</b>		MS 801
	Honeys other than pressed honey	not more than 0.1g/100g	
	Pressed honey	not more than 0.5 g/100g	
4	<b>Free Acidity</b>	not more than 50 milliequivalents acid per 1000g.	MS 801
5	<b>Diastase Activity</b>		MS 801
	Honey after processing and/or blending	not less than 8 Schade units	
	Honeys with a low natural enzyme content	not less than 3 Schade Units	
6	<b>Hydroxymethylfurfural Content</b>	not more than 40 mg/kg.	MS 801
		not more than 80 mg/kg. (for honey of declared origin from countries or regions with tropical ambient temperatures, and blends of these honeys)	
7	<b>Electrical Conductivity</b>		MS 801
	a) Honey not listed under (b) or (c), and blends of these honeys	not more than 0.8 mS/cm	
	b) Honeydew and chestnut honey and blends of these except with those listed under (c)	not less than 0.8 mS/cm	
	c) Exceptions: Strawberry tree ( <i>Arbutus unedo</i> ), Bell Heather ( <i>Erica</i> ), Eucalyptus, Lime ( <i>Tilia spp</i> ), Ling Heather ( <i>Calluna vulgaris</i> ) Manuka or Jelly bush ( <i>Leptospermum</i> ), Tea tree ( <i>Melaleuca spp</i> ).		

#### 4.4 Microbiological limits

Honey shall comply with the microbiological limits given in **Table 2**.

**Table 2: Microbiological limits for honey**

S/N	1	2	3
1	<b>Characteristic</b>	<b>Limits per mL (except salmonella, per 25 mL)</b>	<b>Test method</b>
2	Yeast and moulds	< 500 cfu/g	ISO 21527 part 2
3	<i>Clostridium perfringes</i>	0	ISO 7937
4	<i>Clostridium botulinum</i>	0	AOAC 977.26
5	<i>Salmonella spp.</i>	0	ISO 6579-1
6	<i>E.coli</i>	Absent	ISO 7251

#### 4.5 Presentation styles

Honey may be presented as follows:

- a) Honey which is honey in liquid or crystalline state or a mixture of the two;
- b) Comb honey, which is honey, stored by bees in the cells of freshly built broodless combs and which is sold in sealed whole combs or sections of such combs;
- c) Chunk honey, which is, honey containing one or more pieces of comb honey;
- d) Crystallised or granulated honey which is honey that has undergone a natural process of solidification as a result of glucose crystallization; and
- e) Creamed (or creamy or set) honey is honey which has a fine crystalline structure and which may have undergone a physical process to give it that structure and to make it easy to spread.

## 5 CONTAMINANTS

### 5.1 Heavy metals

Honey shall be free from heavy metals in amounts which may represent a hazard to human health. The products covered by this standard shall comply with those maximum levels for heavy metals prescribed in MS 302.

### 5.2 Residues of pesticides and veterinary drugs

The products covered by this standard shall comply with those maximum residue limits for honey established by the Codex Alimentarius Commission.

**Note:** There should be residue monitoring plans that capture identified heavy metals, pesticides and veterinary drugs.

## 6 HYGIENE

Products covered by the provisions of this standard shall be prepared and handled in accordance with the appropriate clauses of MS 21.

## 7 PACKAGING AND LABELING

### 7.1 Packaging

**7.1.1** Honey shall be packed in suitable food grade containers having no action on the products. The containers shall be free from other products that may lead to contamination of the product.

**7.1.2** The containers shall be air tight and shall be provided with tamper-proof seals and closures. Provisions shall be made to enable the consumer to reseal the container after use.

## **7.2 Labeling of retail containers**

In addition to the provisions of MS 19, the following specific provisions shall apply:

**7.2.1** Products conforming to this standard shall be designated 'honey'.

**7.2.2** For products described in clause **3.2** the name of the food may be supplemented by the term "blossom" or "nectar".

**7.2.3** For products described in clause **3.3** the word "honeydew" may be placed in close proximity to the name of the food.

**7.2.4** For mixtures of the products described in clauses **3.2** and **3.3** the name of the food may be supplemented with the words "a blend of honeydew honey with blossom honey".

**7.2.5** Honey may be designated by the name of the geographical or topographical region if the honey was produced exclusively within the area referred to in the designation.

**7.2.6** Honey may be designated according to floral or plant source if it comes wholly or mainly from that particular source and has the organoleptic, physicochemical and microscopic properties corresponding with that origin.

**7.2.7** Where honey has been designated according to floral or plant source (clause **7.2.1.6**) then the common name or the botanical name of the floral source shall be in close proximity to the word "honey".

**7.2.8** Where honey has been designated according to floral, plant source, or by the name of a geographical or topological region, then the name of the country where the honey has been produced shall be declared.

**7.2.9** The subsidiary designations listed in clause **7.2.1.10** may not be used unless the honey conforms to the appropriate description contained therein. The styles in clause **7.2.1.11** (b) and (c) shall be declared.

**7.2.10** Honey may be designated according to the method of removal from the comb, as follows:

- a) **Extracted honey** is honey obtained by centrifuging decapped broodless combs;
- b) **Pressed honey** is honey obtained by pressing broodless combs; and
- c) **Drained honey** is honey obtained by draining decapped broodless combs.

**7.2.11** Honey may be designated according to the following styles:

- a) **Honey** which is honey in liquid or crystalline state or a mixture of the two;
- b) **Comb honey** which is honey stored by bees in the cells of freshly built broodless combs and which is sold in sealed whole combs or sections of such combs; and
- c) **Cut comb in honey or chunk honey** which is honey containing one or more pieces of comb honey.

**7.2.12** Honey which has been filtered in such a way as to result in the significant removal of pollen shall be designated "filtered honey".

## **7.3 Labeling of non-retail containers**

**7.3.1** Information on labeling as specified in the MS 19 and in clause **7.2** of this standard shall be given either on the container or in accompanying documents, except that the name of the product, lot identification and the name and address of the producer, processor or packer shall appear on the container.

**7.3.2** The following information shall be marked on each package or on a label:



- a) The name of the product, 'honey' and trade name or brand name, if any; the name may be supplemented by the term 'blossom' or 'nectar' or 'honeydew' or 'blend of honeydew honey with blossom honey' depending on the origin of the honey;
- b) The name and address of the producer or packer;
- c) The net weight;
- d) The harvesting country;
- e) Batch number;
- f) The harvesting year;
- g) The date of 'best before date';
- h) The storage mode and instructions; and
- i) Nutrition information as necessary.

**7.3.3** Where honey has been designated according to floral, plant source or by the name of a geographical or topological region, then the name of the country where the honey has been produced shall be declared.

## **8 SAMPLING AND METHODS OF TEST**

### **8.1 Sampling**

Sampling shall be carried out as specified in **Annex A** of this draft Malawi standard.

### **8.2 Methods of test**

Testing of honey shall be done in accordance to the test methods prescribed in **Tables 1** and **2**.

**ANNEX A  
(Normative)  
SAMPLING OF HONEY**

**A 1 General requirements**

**A 1.1** In drawing, preparing, storing and handling samples, the following precautions and directions shall be observed:

**A 1.1.1** Samples shall be taken in a protected place not exposed to damp air, dust or soot.

**A 1.1.2** The sampling instrument shall be clean and dry when used.

**A 1.1.3** Precautions shall be taken to protect the samples, the material being sampled, the sampling instrument and the containers for samples from adventitious contamination.

**A 1.1.4** The samples shall be placed in clean and dry glass containers. The sample containers shall be of such a size that they are almost completely filled by the samples.

**A 1.1.5** Each container shall be sealed air-tight after filling and marked with full details of sampling, code number, and other important particulars of the consignment.

**A 1.1.6** Samples shall be stored in such a manner that the temperature of the material does not vary unduly from the normal temperature.

**A 2 Scale of sampling**

**A 2.1 Lot.** All containers in a single consignment belonging to the same type and grade of honey shall constitute a lot. If the consignment is declared to consist of different grades of material the containers belonging to the same grade shall be grouped together and the groups of containers of the same grade in a consignment shall constitute separate lots.

**A 2.1.1** Samples shall be tested from each lot for ascertaining its conformity to the requirements of this specification.

**A 2.2** The number of containers to be drawn from each lot shall depend on the size of the lot and it shall be done according to columns 1, 2 and 3 in **Table A1**.

**Table A1: Sampling procedure**

S/N	1	2	3
1	Lot size, containers	Number of containers to be selected for size of the container	
		500 g and above	Below 500 g
2	Up to 25	3	6
3	26 to 150	4	6
4	151 to 500	5	9
5	501 and above	7	12

**A 2.3** The containers shall be selected at random from the lot and for this purpose a random number table as agreed to between the purchaser and the supplier shall be used. If such a table is not available, the following procedure shall be adopted:

**A 2.3.1** Starting from any container in the lot, count them as 1, 2, 3,....., up to  $r$  in a systematic manner, where  $r$  is equal to the integral part of  $N/n$ ,  $N$  being the total number of containers in the lot,  $n$  the number of containers to be chosen (see Table

**A 1).** Every *r*th container thus counted shall be separated until the requisite number of containers is obtained from the lot to give samples for test.

### **A 3 Test samples and referee samples**

**A 3.1** The samples shall be drawn and prepared according to **A 3.2** and **A 3.3**, when the container are selected according to column 2 of table A 1. Clause **A 3.3** shall be followed when the containers are selected according to column 3 of table A 1.

#### **A 3.2 Preparation of Individual samples**

Draw with suitable sampling equipment equal quantities of the honey from different parts (top, middle, bottom etc) of the container till about 300g is drawn; divide into three equal parts. Each part so obtained shall constitute an individual sample representing the container and shall be transferred immediately to thoroughly clean and dry containers and sealed air-tight, and marked with particulars given in **A 1.1.5**. Three individual samples so obtained from each container shall be made into sets in such a way that each set has a sample representing each selected container. One of these shall be marked for the purchaser, another for the vendor and the third for the referee.

#### **A 3.3 Preparation of a composite sample**

From the material from each of the selected container, remaining after the individual sample has been taken, approximately equal quantities of the material shall be taken and mixed together so as to form a composite sample weighing about 150 g. This composite sample shall be divided into three equal parts and transferred to clean and dry containers sealed air-tight and labeled with particulars as prescribed in **A 1.1.5**. One of these composite samples shall be for the purchaser, another for the vendor and the third for the referee.

**A 3.4** When honey is in containers of size less than 500 g, the number of containers shall be selected according to column 3 of table **A 1**. The selected containers shall be divided at random into three equal sets. The containers belonging to each set shall be opened and approximately equal quantity of material shall be taken and mixed together to form a composite sample of 50 g. The honey left in each container after preparation of composite sample shall be sealed air-tight with all the particulars as prescribed in **A 1.1.5**. The three sets of the individual samples with their corresponding composite samples shall be marked in such a way that one set is for the purchaser, another for the vendor and the third for the referee.

**A 3.5 Reference samples.** Reference samples shall consist of a set of individual samples (**A 3.2** and **A 3.4**) and a composite sample (**A 3.3** and **A 3.4**).

### **A 4 Number of tests**

**A 4.1** Tests for moisture, ash and total reducing sugars and Fiehe's test shall be conducted on each of the samples constituting a set of individual samples.

**A 4.2** Tests for the specific gravity, sucrose percent, fructose-glucose ratio and acidity shall be conducted on the composite sample.

**A 4.2.1** If Fiehe's test is positive, aniline chloride test shall be carried out on the individual sample.

### **A 5 Criteria for conformity**

**A 5.1** A lot shall be declared to have satisfied the requirements of the specification when **A 5.1.1** to **A 5.1.4** are satisfied.

**A 5.1.1** Each individual sample shall satisfy the requirements given in **A 3.1**, **A 3.2** and **A 3.3**.

**A 5.1.2** The test results on the composite sample for the characteristics mentioned in **A 4.2** and **A 4.2.1** shall satisfy the corresponding requirements as prescribed in clause **4** of this standard.

**A 5.1.3** The test result on individual samples for Fiehe's test shall be negative. The aniline chloride test, carried out on those individual samples in which Fiehe's test is positive, shall satisfy the corresponding requirements as prescribed in clause 4 of this standard.

**A 5.1.4** The test results for moisture, ash and total reducing sugars shall be recorded as shown in **Table A2** of this standard. The mean and range for the test results of the individual sample shall be calculated as follows:

$$\text{Mean (X)} = \frac{\text{sum of test results}}{\text{number of test results}}$$

Range (R) = the difference between the maximum and minimum values of the test results.

The mean and range shall be recorded as shown in Columns 3 and 4 of **Table A2** respectively. The appropriate expression as shown in column 6 of **Table A2** shall be calculated. If the values of these expression satisfy the relevant conditions prescribed in column 6 of **Table A2**, the lot shall be declared to have satisfied the requirements of moisture, ash and total reducing sugars.

**Table A2: Criteria for conformity**

S/N	1	2	3	4	5
1	Characteristic	Test results 1, 2, ..., n	Mean	Range	Criterion for conformity
2	Moisture	–	$X_1$	$R_1$	$X_1 + 0,6 R_1 \leq$ the value of the grade as specified in clause 4
3	Ash	–	$X_2$	$R_2$	$X_2 + 0,6 R_2 \leq 0.5$
4	Total reducing sugars	–	$X_3$	$R_3$	$X_3 + 0,6 R_3 \leq$ the value of that grade as specified in clause 4

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## THE MALAWI BUREAU OF STANDARDS

The Malawi Bureau of Standards is the standardizing body in Malawi under the aegis of the Ministry of Industry. Set up in 1972 by the Malawi Bureau of Standards Act (Cap: 51:02), the Bureau is a parastatal body whose activities aim at formulating and promoting the general adoption of standards relating to structures, commodities, materials, practices, operations and from time to time revise, alter and amend the same to incorporate advanced technology.

## CERTIFICATION MARK SCHEME

To bring the advantages of standardization within the reach of the common consumer, the Bureau operates a Certification Mark Scheme. Under this scheme, manufacturers who produce goods that conform to national standards are granted permits to use the Bureau's "Mark of Quality" depicted below on their products. This Mark gives confidence to the consumer of the commodity's reliability.

