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First edition

DRAFT MALAWI STANDARD

**Pepper (*Piper nigrum* L.), whole or
ground – Specification, Part 2:
White pepper**

NOTE – This is a draft proposal and shall neither be used nor regarded as a Malawi standard

Pepper (*Piper nigrum* L.), whole or ground – Specification, Part 2: White pepper

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TABLE OF CONTENTS

Contents	Page
Foreword.....	i
Technical committee.....	i
Notice.....	i
Scope.....	1
Normative references.....	1
Terms and definitions.....	2
Description.....	2
Requirements.....	3
Hygiene.....	4
Packaging and labelling.....	4
Sampling.....	4
Test methods.....	4
Annex A (normative) – Whole white pepper: determination of apparent bulk density.....	5
Annex B (informative) – Recommendations for storage and transport.....	8

FOREWORD

This draft Malawi standard has been prepared by MBS/TC 8, the Technical Committee on *Spices and condiments*, to provide requirements for whole or ground black pepper.

The standard is based on the International standard, ISO 959-2:1998, *Pepper (Piper nigrum L), whole or ground – Specification, Part 2: White pepper*.

Acknowledgement is made for the use of the information.

TECHNICAL COMMITTEE

This draft Malawi standard was prepared by MBS/TC 8, the Technical Committee on Spices and condiments, and the following companies, organizations and institutions were represented:

Blantyre City Council;
Blantyre District Health Office (Ministry of Health);
Blantyre ADD;
Lilongwe University of Agriculture and Natural Resources (Bunda College Campus);
Malawi Bureau of Standards;
Nali Limited;
Peoples Trading Centre;
Rab Processors Ltd;
Tajo Foods; and
Unilever South East (Malawi) Ltd.

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.

DRAFT PROPOSAL**Pepper (*Piper nigrum* L.), whole or ground – Specification, Part 2: White pepper**

1 SCOPE

This part of MS 1289 specifies requirements for white pepper (*Piper nigrum* L.) (MS 1068), whole or ground, at the following commercial stages:

1.1 Semi-processed (SP); and

1.2 Processed (P).

When the term "white pepper" is used alone, it means that the specification applies to both types described, without distinction.

This part of MS 1289 is not applicable to white pepper categories called "light".

NOTE: Specifications for black pepper are given in MS 1289-1.

Recommendations relating to storage and transport conditions are given in annex B.

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 currently valid national and draft Malawi standards may be obtained from the Malawi Bureau of Standards.

MS 19, *Labelling of pre-packed foods – General standard*;

MS 21, *Food and food processing units – Code of hygienic conditions*;

MS 139, *Spices and condiments – Determination of extraneous matter and foreign matter content*;

MS 141, *Spices and condiments – Determination of total ash*;

MS 142, *Spices and condiments – Determination of filth*;

MS 918, *Spices and condiments – Determination of moisture content – Entrainment method*;

MS 919, *Spices and condiments – Determination of acid-insoluble ash*;

MS 920, *Spices, condiments and herbs – Determination of volatile oil content*.

MS 922, *Spices and condiments – Determination of non-volatile ether extract*;

MS 1068, *Spices and condiments – Botanical nomenclature*;

ISO 948, *Spices and condiments – Sampling*;

ISO 5564, *Black pepper and white pepper, whole or ground – Determination of piperine content – Spectrophotometric method*; and

ISO 5498, *Agricultural food products – Determination of crude fibre content – General method*.

3 TERMS AND DEFINITIONS

For the purposes of this standard, the following terms and definitions shall apply:

3.1

black pepper

dried berry of *Piper nigrum* L., having an unbroken pericarp

3.2

white pepper

berry of *Piper nigrum* L., from which the outer pericarp has been removed (see 4.1)

3.3

white pepper, semi-processed (SP)

pepper that has undergone a partial treatment by the producing country before being exported, and that conforms to the requirements of this part of MS 1289

3.4

white pepper, processed (P)

pepper that has been processed (cleaning, drying, preparation, grading, etc.) by the producing country before being exported, and that conforms to the requirements of this part of MS 1289

3.5

white pepper, ground

pepper obtained by grinding white pepper berries without adding any foreign matter to the pepper (e.g. whitening agents), and that conforms to the requirements of this part of MS 1289

3.6

black berry

berry of dark colour, generally consisting of a black pepper berry whose pericarp has not been fully removed

3.7

broken berry

berry that has been separated into two or more pieces

3.8

extraneous matter

all materials other than white pepper berries, irrespective of whether they are of vegetable (e.g. stems and leaves) or mineral (e.g. sand) origin

NOTE: Black and broken berries are not considered as extraneous matter.

4 DESCRIPTION

4.1 Whole white pepper is obtained in two ways, as follows:

- a) from black pepper using the whole dry berry of *Piper nigrum* L., generally picked before complete ripening, and removing the outer pericarp, with or without preliminary soaking in water; if necessary, drying is carried out afterwards;
- b) from the whole ripe berry of *Piper nigrum* L., removing the outer pericarp by the same procedure as described above.

Berries of white pepper are generally spherical in shape, of diameter 3 mm to 6 mm, having a smooth surface, and are slightly flattened at one pole and have a small protuberance at the other.

Berries generally have vertical scores going from one pole to the other, of a slightly darker colour. The colour of white pepper varies from matt brownish grey to pale ivory white.

4.2 Ground white pepper is obtained by grinding white pepper berries, without adding any foreign matter to the pepper.

5 REQUIREMENTS

5.1 Odour and flavour

When ground, the odour and flavour shall be characteristic of white pepper, slightly sharp and very aromatic. The product shall be free from foreign odours and flavours.

NOTE: The appearance of berries has no direct relation to their flavour. Smaller berries can be more aromatic than berries of larger size or of better appearance.

5.2 Freedom from mould, insects, etc.

White pepper shall be free from mould growth and living insects, and practically free from dead insects, insect fragments and rodent contamination visible to the naked eye (corrected, if necessary, for abnormal vision) or with such magnification as may be necessary in any particular case. If the magnification exceeds x10, this fact shall be mentioned in the test report.

In the case of ground white pepper, impurities shall be determined according to the method given in MS 142.

5.3 Physical characteristics

Whole white pepper shall meet the requirements specified in table 1.

Table 1 – Physical characteristics of whole white pepper

Characteristics	Requirements		Reference test method
	Pepper SP	Pepper P	
Extraneous matter, % (m/m), max.	1.0	0.8	MS 139
Broken berries, % (m/m), max.	4.0	3.0	Physical separation and weighing
Black berries, % (m/m), max	15 ^a	10 ^a	Physical separation and weighing
Bulk density, g/l, min.	600	600	Annex A

^a These values do not apply to "Samarinda" pepper, which always contains 20 % black berries.

5.4 Chemical characteristics

The white pepper shall meet the requirements specified in table 2 when tested by the specified method.

Table 2 – Chemical requirements of white pepper, whole or ground

Characteristics	Requirements		Reference test method
	Pepper S or SP	Ground pepper	
Moisture content, % (m/m), max.	14.0	14.0	MS 918
Total ash, % (m/m), max., on dry basis	3.5	3.5	MS 141
Non-volatile ether extract, % (m/m), min., on dry basis	6.5	6.5	MS 920
Volatile oils, % (ml/100 g), min.	1.0	0.7 ^a	MS 922
Piperine content, % (m/m), min., on dry basis	4.0	4.0	ISO 5564
Acid-insoluble ash, % (m/m), max., on dry basis	–	0.3	MS 919
Crude fibre, insoluble index, % (m/m), max., on dry basis	–	6.5	ISO 5498

^a The volatile oil content should be determined immediately after grinding

6 HYGIENE

It is recommended that the products covered by the provisions of this standard be prepared and handled in accordance with MS 21.

7 PACKAGING AND LABELLING

7.1 Packaging

Whole white pepper and ground white pepper shall be packed in clean, sound, dry packages, made of a material which does not affect the product but which protects it from the ingress of moisture or loss of volatile matter.

The packaging shall also comply with any national legislation relating to environmental protection.

7.2 Labelling

In addition to the requirements prescribed in MS 19, the following particulars shall be marked on each package or on a label attached to the package:

- a) name of the product and the tradename, if any;
- b) name and address of the manufacturer or packer, or trademark;
- c) code or batch number;
- d) net mass;
- e) commercial stage (SP or P);
- f) producing country;
- g) storage conditions;
- h) best before date; and
- i) any other information requested by the buyer, such as the year of harvest and the date of packaging.

8 SAMPLING

White pepper shall be sampled using the method specified in ISO 948.

Samples of whole white pepper shall be ground so that all material passes through a sieve with apertures of size 1 mm. The material thus obtained shall be used for determining the characteristics given in table 2.

9 TEST METHODS

Samples of white pepper shall be analysed to ensure conformity with the requirements of this part of MS 1289 by following the methods specified in tables 1 and 2.

ANNEX A
(normative)

WHOLE WHITE PEPPER: DETERMINATION OF APPARENT BULK DENSITY

A.1 Scope

This annex specifies a method for the determination of the apparent bulk density of whole white pepper.

A.2 Principle

Weighing a volume, exactly measured, of 1 litre of pepper.

A.3 Apparatus

A.3.1 Apparatus for measuring bulk density, consisting of:

- a) **cylinder**, of capacity 1 litre, or a cylinder of greater capacity but equipped with apparatus allowing levelling of the product to the 1 level;
- b) **hopper**, of capacity greater than 1 litre and equipped with a gate; and
- c) **device**, for fixing the hopper above the cylinder at a certain distance, to allow free fall of the product into the cylinder from a constant height.

Figure A.1 shows an example of such an apparatus.

NOTE: This is the apparatus applicable to the reference method. However, for routine control and when the apparatus described is not available, it is possible to use a cylinder of 1 litre capacity and a funnel.

A.3.2 Balance

A special balance allowing the cylinder to be hooked to one side of the beam and equipped on the other side with a suitable plate serving as tare.

A.4 Procedure

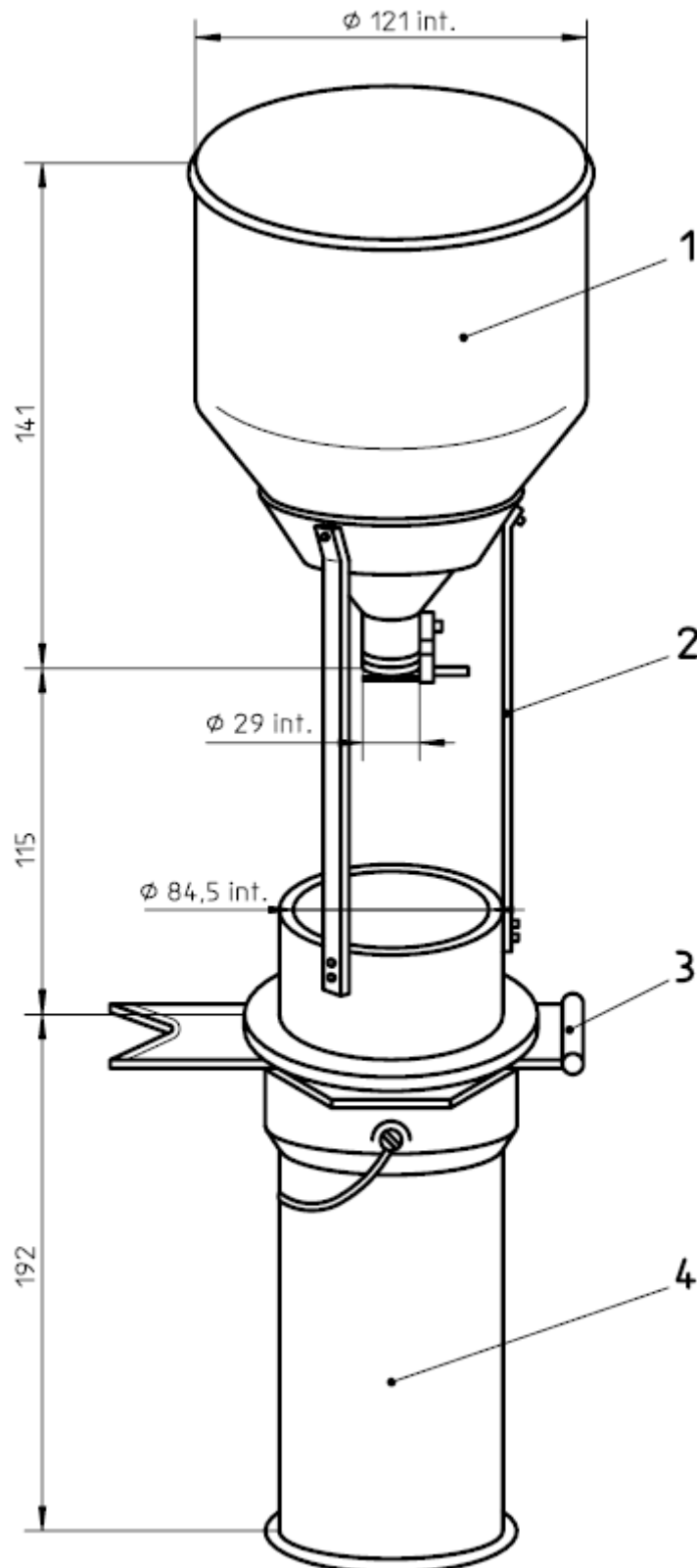
A.4.1 Determination

Weigh the empty cylinder, if necessary.

Place the cylinder on a horizontal plane and set the hopper on it with a fixing device.

Pour the pepper into the hopper until it is filled. Open the gate and allow the pepper berries to flow freely into the cylinder until the level slightly exceeds the upper level or the 1 litre level, according to the apparatus used.

Level the pepper, according to the case, to the upper level of the cylinder with a ruler, or to the 1 litre level with a suitable device with which the cylinder is equipped. In the latter case, remove the excess berries.



Key

- 1 Filling hopper
- 2 Funnel supports
- 3 Cut-off blade
- 4 Measuring container, capacity 1 litre

NOTE: Figure A.1 gives the dimensions of the apparatus of 1 litre capacity. If it is required to carry out the determination with a sample reduced to half, an apparatus the dimensions of which are also reduced in the same proportions can be used, but this is solely under the responsibility of the operator. **Only the 1 litre method is the reference method.**

Figure A.1 – Nilema-litre apparatus A.4.2 Number of determinations

Remove the hopper and its support, then weigh the cylinder filled with the pepper.

A.4.2 Number of determinations

Carry out three determinations.

A.5 Expression of results

A.5.1 Method of calculation

The apparent bulk density of pepper, expressed in grams per litre, is given by the mass of pepper contained in the cylinder.

Take as the result, the arithmetic mean of the three determinations if the repeatability conditions (see **A.5.2**) are satisfied. Otherwise, carry out three further determinations. If the former conditions are still not satisfied, take the arithmetic mean of the six determinations as the result.

A.5.2 Repeatability

The difference between the results of two determinations carried out in rapid succession by the same analyst using the same apparatus shall not exceed 5 g per litre.

A.6 Test report

The test report shall specify the method used and the result obtained. It shall also mention all operating details not specified in this annex, or regarded as optional, together with details of any incidents which may have influenced the results.

The test report shall include all information necessary for the complete identification of the sample.

ANNEX B
(informative)

RECOMMENDATIONS FOR STORAGE AND TRANSPORT

B.1 The packages of pepper should be stored in covered rooms, well protected from sun, rain and excessive heat.

B.2 The store should be dry, free from unpleasant smells and protected against penetration of insects and vermin. The ventilation should be regulated so that good ventilation is ensured during the dry period and ventilation can be fully stopped during the damp period. Suitable provisions should be taken to allow fumigation of the store.

B.3 The packages should be handled and transported in such a manner that they are protected from rain, sun, or other excessive heat sources, from unpleasant smells and all contamination, particularly in the holds of ships.

THE MALAWI BUREAU OF STANDARDS

The Malawi Bureau of Standards is the standardizing body in Malawi under the aegis of the Ministry of Industry and Trade. 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.

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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.

