

CODEX ALIMENTARIUS

INTERNATIONAL FOOD STANDARDS



Food and Agriculture
Organization of
the United Nations



World Health
Organization

E-mail: codex@fao.org - www.codexalimentarius.org

STANDARD FOR WHOLE AND DECORTICATED PEARL MILLET GRAINS

CXS 169-1989

Adopted in 1989. Revised in 1995. Amended in 2019.

1. SCOPE

This Standard applies to whole and decorticated pearl millet destined for human consumption which is obtained from *Pennisetum americanum* L., Senegalese varieties “souna” and “sanio”.

2. DESCRIPTION

2.1 Definition of the product

Pearl millet grains shall be whole or decorticated and suitable dried if necessary. They shall have the characteristics of the species *Pennisetum americanum* L.

2.1.1 Whole grains

These are grains of pearl millet obtained as such after proper threshing with no mechanical treatment.

2.1.2 Decorticated grains

These are grains of pearl millet from which outer parts, amounting to 20–22% of the weight of the whole grains have been removed in an appropriate manner using mechanical treatment (for example, simple abrasion).

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Quality factors – general

3.1.1 Pearl millet grains shall be safe and suitable for human consumption.

3.1.2 Pearl millet grains shall be free from abnormal flavours, odours, and living insects.

3.1.3 Pearl millet grains shall be free from filth (impurities of animal origin, including dead insects) in amounts which may represent a hazard to human health.

3.2 Quality factors – specific

3.2.1 Moisture content 13% m/m max

Lower moisture limits should be required for certain destinations in relation to the climate, duration of transport and storage.

3.3 Definition of defects

Extraneous matter is vegetable matter, shrivelled grains (grains which have not reached normal maturity), altered grains, etc.

3.4 Tolerances for defects

Extraneous matter – Whole pearl millet grains shall not have more than 2.0% of extraneous matter. Decorticated pearl millet grains shall not have more than 0.5% of extraneous matter. Also, whole and decorticated pearl millet grains shall be practically free from dirt, animal debris, mineral particles and diseased grains.

4. CONTAMINANTS

4.1 Heavy metals

Pearl millet grains shall be free from heavy metals in amounts which may represent a hazard to human health.

4.2 Pesticide residues

Pearl millet grains shall comply with those maximum residue limits established by the Codex Alimentarius Commission for this commodity.

4.3 Mycotoxins

Pearl millet grains shall comply with those maximum mycotoxin limits established by the Codex Alimentarius Commission for this commodity.

5. HYGIENE

5.1 It is recommended that the product covered by the provisions of this Standard be prepared and handled in accordance with the appropriate sections of the *General Principles of Food Hygiene* (CXC 1-1969), and other Codes of Practice recommended by the Codex Alimentarius Commission which are relevant to this product.

5.2 To the extent possible in good manufacturing practice, the product shall be free from objectionable matter.

5.3 When tested by appropriate methods of sampling and examination, the product:

- shall be free from micro-organisms in amounts which may represent a hazard to health;
- shall be free from parasites which may represent a hazard to health; and
- shall not contain any substance originating from micro-organisms in amounts which may represent a hazard to health.

6. PACKAGING

6.1 Pearl millet grains shall be packaged in containers which will safeguard the hygienic, nutritional, technological, and organoleptic qualities of the product.

6.2 The containers, including packaging material, shall be made of substances which are safe and suitable for their intended use. They should not impart any toxic substance or undesirable odour or flavour to the product.

6.3 When the product is packaged in sacks, these must be clean, sturdy and strongly sewn or sealed.

7. LABELLING

In addition to the requirements of the *General Standard for the Labelling of Prepackaged Foods* (CXS 1-1985), the following specific provisions apply:

7.1 Name of the product

7.1.1 The name of the product to be shown on the label shall be “millet grains”, or “decorticated millet grains”.

7.2 Labelling of non-retail containers

Information for non-retail containers shall either be given on the container or in accompanying documents, except that the name of the product, lot identification and the name and address of the manufacturer or packer shall appear on the container. However, lot identification and the name and address of the manufacturer or packer may be replaced by an identification mark, provided that such a mark is clearly identifiable with the accompanying documents.

8. METHODS OF ANALYSIS AND SAMPLING

For checking the compliance with this standard, the methods of analysis and sampling contained in the *Recommended Methods of Analysis and Sampling* (CXS 234-1999) relevant to the provisions in this standard, shall be used.

ANNEX

In those instances where more than one factor limit and/or method of analysis is given we strongly recommend that users specify the appropriate limit and method of analysis.

Factor/Description	Limit	Method of analysis
APPEARANCE ▪ brown, white or green	Buyer Preference	Visual Examination
1 000 KERNEL WEIGHT		None Defined
▪ whole millet grains	RANGE: 5.0 to 10.0 g	
▪ decorticated millet grains	RANGE: 4.0 to 8.0 g	
1 LITRE WEIGHT	RANGE: 750 to 820 g	None Defined
ASH ▪ decorticated millet grains	RANGE: 0.8 to 1.0% on a dry matter basis	AOAC 923.03
PROTEIN (N x 5.7)	MIN: 8.0% on a dry matter basis	AOAC 920.87
DECORTICATION	MAX: 20%	None Defined
CRUDE FIBRE ▪ whole millet grains	RANGE: 3.0 to 4.5% on a dry matter basis	ISO 5498:1981
▪ decorticated millet grains	MAX: 2.0% on a dry matter basis	
FAT		AOAC 945.38F; 920.39C ISO 5986:1983
▪ whole millet grains	RANGE: 3.5 to 6.0% on a dry matter basis	
▪ decorticated millet grains	RANGE: 2.0 to 4.0% on a dry matter basis	