

# CODEX ALIMENTARIUS

INTERNATIONAL FOOD STANDARDS



Food and Agriculture  
Organization of  
the United Nations



World Health  
Organization

E-mail: [codex@fao.org](mailto:codex@fao.org) - [www.codexalimentarius.org](http://www.codexalimentarius.org)

---

## STANDARD FOR WHOLE AND DECORTICATED PEARL MILLET GRAINS

CXS 169-1989

Adopted in 1989. Revised in 1995. Amended in 2019, 2023.

### **2023 Amendments**

Following decisions taken at the Forty-sixth Session of the Codex Alimentarius Commission in December 2023, amendments were made in the Annex.

## 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 percent 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 percent 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 percent of extraneous matter. Decorticated pearl millet grains shall not have more than 0.5 percent 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 (CAC) for this commodity.

### 4.3 Mycotoxins

Pearl millet grains shall comply with those maximum mycotoxin limits established by the CAC 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),<sup>1</sup> and other codes of practice recommended by the CAC 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 microorganisms 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 microorganisms 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 pre-packaged foods* (CXS 1-1985),<sup>2</sup> 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)<sup>3</sup> 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.

| <b>Factor/Description</b>                    | <b>Limit</b>                             | <b>Method of analysis</b> |
|--|--|---------------------------|
| <b>APPEARANCE</b><br>▪ brown, white or green | Buyer preference                         | Visual examination        |
| <b>1 000 KERNEL WEIGHT</b>                   |  | None defined              |
| ▪ whole millet grains                        | Range: 5.0 to 10.0 g                     |                           |
| ▪ decorticated millet grains                 | Range: 4.0 to 8.0 g                      |                           |
| <b>1 LITRE WEIGHT</b>                        | Range: 750 to 820 g                      | None defined              |
| <b>ASH</b><br>▪ decorticated millet grains   | Range: 0.8 to 1.0% on a dry matter basis | Refer to Section 8        |
| <b>PROTEIN (N x 5.7)</b>                     | Min: 8.0% on a dry matter basis          | Refer to Section 8        |
| <b>DECORTICATION</b>                         | Max: 20%                                 | None defined              |
| <b>CRUDE FIBRE</b><br>▪ whole millet grains  | Range: 3.0 to 4.5% on a dry matter basis | Refer to Section 8        |
| ▪ decorticated millet grains                 | Max: 2.0% on a dry matter basis          |                           |
| <b>FAT</b>                                   |  | Refer to Section 8        |
| ▪ 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 |                           |

## NOTES

---

<sup>1</sup> FAO and WHO. 1969. *General principles of food hygiene*. Codex Alimentarius Code of Practice, No. CXC 1-1969. Codex Alimentarius Commission. Rome.

<sup>2</sup> FAO and WHO. 1985. *General standard for the labelling of pre-packaged foods*. Codex Alimentarius Standard, No. CXS 1-1985. Codex Alimentarius Commission. Rome.

<sup>3</sup> FAO and WHO. 1999. *Recommended methods of analysis and sampling*. Codex Alimentarius Standard, No. CXS 234-1999. Codex Alimentarius Commission. Rome.