

# 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)

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## STANDARD FOR MAIZE (CORN)

CXS 153-1985

Adopted in 1985. Revised in 1995. Amended in 2019.

## 1. SCOPE

This Standard applies to maize (corn) for human consumption, i.e., ready for its intended use as human food, presented in packaged form or sold loose from the package directly to the consumer. This Standard specifies requirements for whole grain shelled dent maize, *Zea mays indentata* L., and/or shelled flint maize, *Zea mays indurata* L., or their hybrids. It does not apply to processed maize.

## 2. DESCRIPTION

### 2.1 Product definition

Maize (corn) is the shelled grains of the species defined in the scope.

## 3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

### 3.1 Quality factors – general

3.1.1 Maize shall be safe and suitable for human consumption.

3.1.2 Maize shall be free from abnormal flavours, odours and living insects.

3.1.3 Maize shall be free from filth in amounts which may represent a hazard to human health.

### 3.2 Quality factors – specific

3.2.1 **Moisture content** 15.5% m/m max

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

3.2.2 **Extraneous matter** are all organic and inorganic materials other than maize, broken kernels, other grains and filth.

3.2.2.1 **Filth** are impurities of animal origin (including dead insects). 0.1% m/m max

3.2.2.2 **Toxic or noxious seeds**

The products covered by the provisions of this Standard shall be free from the following toxic or noxious seeds in amounts which may represent a hazard to human health.

- *Crotalaria* (*Crotalaria* spp.), Corn cockle (*Agrostemma githago* L.), Castor bean (*Ricinus communis* L.), Jimson weed (*Datura* ssp.), and other seeds are commonly recognized as harmful to health.

3.2.2.3 **Other organic extraneous matter** which is defined as organic components other than edible grams of cereals (foreign seeds, stems, etc.) (1.5% m/m max).

3.2.2.4 **Inorganic extraneous matter** which is defined as any inorganic component (stones, dust, etc.) (0.5% m/m max).

## 4. CONTAMINANTS

### 4.1 Heavy metals

Maize (corn) shall be free from heavy metals in amounts which may represent a hazard to human health.

### 4.2 Pesticide residues

Maize (corn) shall comply with those maximum residue limits established by the Codex Alimentarius Commission for this commodity.

### 4.3 Mycotoxins

Maize (corn) 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** Maize (corn) 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 "maize (corn)".

### **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.

<b>Factor/Description</b>	<b>Limit</b>	<b>Method of analysis</b>
<b>KERNELS OF OTHER COLOURS</b>		Visual Examination
<ul style="list-style-type: none"> <li>▪ in yellow maize. Maize grains which are yellow and/or light red in colour are considered to be yellow maize. Maize grains which are yellow and dark red in colour, provided the dark red colour covers less than 50% of the surface of the grain, are also considered to be yellow maize</li> </ul>	MAX: 5.0% by weight of maize of other colours	
<ul style="list-style-type: none"> <li>▪ in white maize. Maize grains which are white and/or light pink in colour are considered to be white maize. White maize also means maize grains which are white and pink in colour, provided the pink colour covers less than 50% of the surface of the grain</li> </ul>	MAX: 2.0% by weight of maize of other colours	
<ul style="list-style-type: none"> <li>▪ in red maize. Maize grains which are pink and white or dark red and yellow in colour are considered to be red maize, provided the pink or dark red colour covers 50% or more of the surface of the grain</li> </ul>	MAX: 5.0% by weight of maize of other colours	
<ul style="list-style-type: none"> <li>▪ mixed maize</li> </ul>		
<b>KERNELS OF OTHER SHAPE</b>		Visual Examination
<ul style="list-style-type: none"> <li>▪ in flint maize</li> </ul>	MAX: 5.0% by weight of maize of other shapes	
<ul style="list-style-type: none"> <li>▪ in dent maize</li> </ul>	MAX: 5.0% by weight of maize of other shapes	
<ul style="list-style-type: none"> <li>▪ flint and dent maize</li> </ul>	RANGE: 5.0% to 95% by weight of flint maize	
<b>DEFECTS</b>		
<ul style="list-style-type: none"> <li>▪ blemished grains: grains which are insect or vermin damaged, stained, diseased, discoloured, germinated, frost damaged, or otherwise materially damaged</li> </ul>	MAX: 7.0% of which diseased grains must not exceed 0.5%	Visual Examination
<ul style="list-style-type: none"> <li>▪ broken kernels</li> </ul>	MAX: 6.0%	ISO 5223-1983 (4.50 mm metal sieve)
<ul style="list-style-type: none"> <li>▪ other grains</li> </ul>	MAX: 2.0%	Visual Examination