

CODEX ALIMENTARIUS

INTERNATIONAL FOOD STANDARDS



Food and Agriculture
Organization of
the United Nations



World Health
Organization

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STANDARD FOR WHOLE MAIZE (CORN) MEAL

CXS 154-1985

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

1. SCOPE

- 1.1 This Standard applies to whole maize (corn) meal for direct human consumption prepared from kernels of common maize, *Zea mays* L., as described in Section 2.1.
- 1.2 This Standard does not apply to degermed maize (corn) meal, enriched maize (corn) meal, maize (corn) flours, maize (corn) grits, quick grits, hominy grits, self-rising maize (corn) meals, bolted maize (corn) meals, maize (corn) flakes and other maize (corn) based ready-to-eat cereals, maize (corn) flaking grits, and alkaline treated maize (corn) products.
- 1.3 This Standard does not apply to maize meals for use as a brewing adjunct, to maize meals used for manufacturing of starch and any industrial use, nor to maize meal for use as an animal feed.

2. DESCRIPTION

Whole maize (corn) meal is the food prepared from fully mature, sound, ungerminated, whole kernels of maize, *Zea mays* L., by a grinding process in which the entire grain is comminuted to a suitable degree of fineness. In its preparation coarse particles of the ground maize kernel may be separated, reground and recombined with all of the material from which they were separated.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Quality factors – general

- 3.1.1 Whole maize meal shall be safe and suitable for human consumption.
- 3.1.2 Whole maize meal shall be free from abnormal flavours, odours, and living insects.
- 3.1.3 Whole maize meal 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** 15.0% m/m max

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

4. CONTAMINANTS

4.1 Heavy metals

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

4.2 Pesticide residues

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

4.3 Mycotoxins

Whole maize (corn) meal 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 Whole maize (corn) meal 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

The name of the product to be shown on the label shall be "whole maize (corn) meal".

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
ASH	MAX: 3.0% on a dry weight basis	AOAC 923.03 ISO 2171:1980 ICC Method No. 104/1 (1990)
PROTEIN (N x 6.25)	MIN: 8% on a dry weight basis	ICC 105/I Method for the Determination of Crude Protein in Cereals and Cereal Products for Food and Feed (Type I). Selenium/Copper catalyst – or – ISO 1871 (1975)
CRUDE FAT	MIN: 3.1% on a dry weight basis	AOAC 945.38F; 920.39C ISO 5986:1983
GRANULARITY	95% or more of the whole maize meal shall pass through a 1.70 mm sieve – and – 45% or more shall pass through a 0.71 mm sieve – and – 35% or less of the whole maize meal shall pass through a 0.212 mm sieve	AOAC 965.22 (Type I method with sieve specifications as in ISO 3310/I 1982 test sieve)