



Technical Specifications for **SORGHUM**

Specification reference: **Sorghum**

Version: **Version 1**

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1. SCOPE

This specification applies to **Sorghum** grains distributed by WFP.

2. DEFINITION

Defects include foreign matter, broken grain, insect damage, miscellaneous impurities.

Broken grains are all pieces of grains and/or grains which, after elimination of all the other components go through a round 1.8mm diameter hole sieve.

Insect damage grains are all the grains eat by insects or rodents.

Sprouted grains are grains that have undergone a beginning of germination.

Foreign matter is all of organic and inorganic materials than sorghum, broken kernels, other grains and filth.

3. REFERENCE

Codex Standard for sorghum grains (Codex Stan 172-1989, rev. 1-1995).

Sudanese Standard SS 2481/2008

Quality control of cereal and pulses. SGS, 2004.

4. PRODUCT SPECIFICATION

4.1 General requirements

- Natural state, smell and colour
- Moisture: **13% max**
- Protein (Nx6.25): **7% min on dry basis**
- Fat: **5% max on dry basis**
- Tannin content: **0.5% max on dry matter**
- Ash content of decorticated grains: **1.5% max**
- Defect (total): **8% max**
 - Broken grains: **2% max**
 - Insect damage grains: **0.5 % max**
 - Sprouted grains: **2 % max**
 - Foreign matter: **2 % max**

- Dead insect: **0.1%** m/m max
- Other miscellaneous impurities: **1.4 %** max (consist of weed seeds, damaged grains by heating or brutal drying, mouldy grains, and husks and fragments of insects).
- Free from live weevils

4.2 Contaminants and Toxins

Contaminants and in Toxins in the **Sorghum** shall not exceed the levels in table 1.

Table 1: Limit of contaminants and toxins

No	Contaminant and toxin	Limit
Heavy metal		
1	Arsenic (As)	< 0.10 ppm
2	Cadmium (Cd)	< 0.10 ppm
3	Lead (Pb)	< 0.02 ppm
4	Mercury (Hg)	< 0.20 ppm
Pesticide residues		
5	Carbamate	< 10 ppb
6	Organochlorine	< 10 ppb
7	Organophosphorus	< 10 ppb
8	Pyrethroid	< 10 ppb
Toxic or noxious seeds		
9	Crotolaria (Crotolaria spp.)	Free
10	Corn cockle (Agrostemma githago L.)	Free
11	Castor bean (Ricinus communis L.)	Free
12	Jimson weed (Datura spp.)	Free
Radiation		
13	Radiation	10 Bq/Kg max
Mycotoxins		
14	Aflatoxin B1+B2+G1+G2	20 ppb max
15	Zearalenone	100 ppb max
16	Ochratoxin A	5 ppb

Sorghum shall not contain other contaminants and toxins in amounts which may represent a hazard to health.

5. PACKAGING AND MARKING

As per contract.

6. STORING

Sorghum must be stored under dry, ventilated and hygienic conditions.

7. ANALYTICAL REQUIREMENTS

The principal tests in table 2 must be performed in order to check if the quality of the sorghum meets above requirements. Additional analyses shall be defined in case of further quality assessment.

Table 2: List of compulsory tests and reference methods

No	Analyses/tests	Limits	Reference methods*
1	Moisture	13% max	ISO 712:2009 ICC Method No 110/1 (1986)
2	Protein (N x 6.25)	7.0% min on dry basis	ICC 105/I (1986)
3	Fat	5.0% max on dry basis	AOAC 945.38F, 920.39C
4	Tannins	0.5% max on dry basis	ISO 9648:1988 (confirmed 1994)
5	Ash	1.5% max on dry basis	AOAC 923.03 ICC No. 104/1(1990)
6	Organoleptic	Natural taste, smell and color	Organoleptic
7	Broken grains	2% max	Gravimetry
8	Insect damage grains	0.5 % max	Gravimetry
9	Sprouted grains	2 % max	Gravimetry
10	Foreign matter	2 % max	Gravimetry
11	Dead insect	0.1% m/m max	Gravimetry
12	Other miscellaneous impurities (consist of weed seeds, damaged grains by heating or brutal drying, mouldy grains, and husks and fragments of insects).	1.4% max	Gravimetry
13	Live weevils	Free	Visual

* *Or equivalent*