



## Technical Specifications for **ETHIOPIA RED BEANS**

Specification reference: **Red Beans**

Version: **V1.0**

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### **1. SCOPE**

This specification applies to origin Ethiopia **Red Beans** purchased by WFP.

### **2. DEFINITION**

**Contrasting colours** beans are all whose kernels are distinctly off colour from the characteristic colour of the predominating class.

**Damaged beans** include whole, split, or broken beans that are sprouted, very immature, perforated, distinctly deteriorated or discoloured by weather or disease and Beans that are otherwise damaged in a way that seriously affects appearance or quality.

**Extraneous matter** includes all materials other than beans.

**Insect damaged** beans include all beans that are deteriorated or discoloured by insects.

**Mouldy beans** are characterized by the presence of dark blue exterior moulds that develop in machine-damaged crevices. Light and dark red kidney beans may develop yellow to black interior moulds in the concave centre area. Heated, rotted, and mouldy are included in the same tolerance.

**Splits** include split beans, broken pieces of beans that are less than three-quarters of whole kernels, and halves of beans that are loosely held together by cracked seed coats.

### **3. REFERENCE**

Codex Standard for certain pulses grains (Codex Stan 171-1989, rev. 1-1995).

Ethiopian Standard ES 18:2001, Pulses- Grading of chickpeas.

Canadian Grain Commission: <http://www.grainscanada.gc.ca>

### **4. PRODUCT SPECIFICATION**

#### **4.1 General requirements**

- Moisture content: **14% max**
- Size **As per contractual agreement**
- Extraneous matter: **1% max**
- Damaged, Split, Broken: **2% max**
- Insect damaged: **2% max**
- Contrasting colours: **2% max**
- Live insects: **Nil**
- Dead weevils **10/kg max**
- Mouldy bean: **Nil**
- Organoleptic: **Clean and bright appearance, Natural smell**
- Cooking time: **60-90 minutes after overnight soaking**
- Production year: **As per contractual agreement**

## 4.2 Contaminants and Toxins

**Red Beans** shall not contain contaminants and toxins in amounts which may represent a hazard to human health. Specific limit of some contaminants and toxins is presented in table 1.

*Table 1: Limit of contaminants and toxins*

No	Contaminant and toxin	Limit
<b>Heavy metal</b>		
1	Arsenic (As)	0.10 ppm max.
2	Copper (Cu)	2.0 ppm max.
3	Lead (Pb)	0.10 ppm max.
4	Cadmium (Cd)	0.02 ppm max.
5	Mercury (Hg)	0.01 ppm max.
<b>Pesticide residues</b>		
6	Carbamate	< 10 ppb
7	Organochlorine	< 10 ppb
8	Organophosphorus	< 10 ppb
9	Pyrethroid	< 10 ppb
<b>Toxic or noxious seeds</b>		
10	Crotalaria (Crotalaria spp.)	0.05 % max.
11	Corn cockle (Agrostemma githago L.)	0.05 % max.
12	Castor bean (Ricinus communis L.)	0.05 % max.
13	Jimson weed (Datura spp.)	0.05 % max.
<b>Radiation</b>		
14	Radiation	10 Bq/Kg max.
<b>Mycotoxins</b>		
15	Aflatoxin (total B1+B2+G1+G2)	20 ppb max.
16	Fumosin	5 ppb max.
17	Zearalenone	100 ppb max.
18	Ochratoxin A	5 ppb max.

## 5. PACKAGING AND MARKING

As per contractual agreement.

## 6. STORING

**Red Beans** must be stored under dry, ventilated and hygienic conditions.

## 7. SAMPLING REQUIREMENTS

Representative samples can be drawn according to international sampling method standards at the bagging section or in the warehouse.

For packed units, sampling frequency and reference method are showed in *table 2*. One laboratory samples of 3 kg is required by lot or sub-lot of 500MT maximum.

For the bulk (static and flowing), the sampling must follow the rules described in paragraphs 5.2 and 5.3 of ISO 24333-2009.

**Table 2: Sampling rules**

<b>Lot or sub-lot size (MT)</b>	<b>Number of increment</b>	<b>Place of sampling</b>	<b>Reference</b>
≤100	3 % of bags and minimum 50 bags (e.g. 60 increments for a lot of 100 MT, packed in 50 kg bag)	Warehouse or during production	GAFTA 124-2
101-200	3 % of bags (e.g. 120 increments for a lot of 200 MT, packed in 50 kg bag)		
201-300	3 % of bags (e.g. 180 increments for a lot of 300 MT, packed in 50 kg bag)		
301-400	3 % of bags (e.g. 240 increments for a lot of 400 MT, packed in 50 kg bag)		
401-500	3 % of bags (e.g. 300 increments for a lot of 500 MT, packed in 50 kg bag)		

## 7. ANALYTICAL REQUIREMENTS

The principal tests in table 3 must be performed in order to check if the quality of the **Red Beans** meets above requirements. Additional analyses shall be defined in case of further quality assessment.

*Table 3: List of compulsory tests and reference methods*

<b>No</b>	<b>Parameters</b>	<b>Recommended level</b>	<b>Reference methods</b>
1	Moisture content	<b>14% max</b>	ES ISO 605
2	Size	<b>As per contractual agreement</b>	ES ISO 605
3	Extraneous matter	<b>1% max</b>	ES ISO 605
4	Damaged, Split, Broken	<b>2% max</b>	Visual Examination
5	Insect damaged	<b>2% max</b>	Visual Examination
6	Contrasting colours	<b>2% max</b>	Visual Examination
7	Live insects	<b>Nil</b>	ES ISO 605 ES ISO 6639 (1-4)
8	Dead weevils	<b>10/kg max</b>	ES ISO 605 ES ISO 6639 (1-4)
9	Mouldy bean	<b>Nil</b>	Visual Examination
10	Cooking time	<b>60-90 minutes after overnight soaking</b>	
11	Organoleptic	<b>Clean and bright appearance, Natural smell</b>	ES ISO 605

*\* Or equivalent*