



Technical Specifications for

SOYBEAN

Commodity code: **PULBEA120**

Version: **2, adopted 2020**

Replacing: **Ver. 13.0, dated 17/06/2013**

Date of issue: **21.07.2020**

*This version replaces the Version 13
The key adjustment is:
-Examination of toxic or noxious seeds*

1. SCOPE

This specification applies to dry **Soybean grains** of the plant *Glycine max*, purchased by WFP.

2. DEFINITION

Yellow soybeans are soybeans that have yellow or green seed coats and which in cross section, are yellow or have a yellow tinge, and may include not more than 10.0 percent of soybeans of others colors.

Mixed soybeans are soybeans that do not meet the requirements of the class Yellow Soybeans.

Heat-damaged kernels are soybeans and pieces of soybeans that are materially discolored and damaged by heat. Soybeans with a light to dark brown cotyledon when cut in cross section are considered heated.

Damaged kernels are soybeans and pieces of soybeans that are badly ground-damaged, badly weather-damaged, diseased, frost-damaged, heat-damaged, insect-bored, mold-damaged, sprout-damaged, purple mottled or stained, immature, shrivelled, stinkbug-stung or otherwise materially damaged. Stinkbug-stung kernels are considered damaged kernels at the rate of one-fourth of the actual percentage of the stung kernels.

Frost-damaged soybeans, when cut in cross-section, are soybeans whose cotyledons are green or greenish-brown with a glassy wax-like appearance are considered frost-damaged. Seeds that are yellow or very pale green are considered sound, even if they are superficially affected by weathering.

Insect damaged kernels are characterized by a perforation of the seed coat in conjunction with a discoloration penetrating into the cotyledon.

Mouldy soybeans are wrinkled and misshapen, and range in colour from medium to dark brown. Large areas of the affected bean are superficially covered with a grey mould. Mouldy beans often have a spongy texture and usually give off an unpleasant odour.

Sprouted are soybeans that whose seed coat splits and the primary root emerges from between the cotyledons.

Purple mottled or stained are soybeans that are discolored by the growth of a fungus; or by dirt; or by a dirt-like substance(s) including nontoxic inoculants; or by other nontoxic substances. If the soybeans are not damaged or discoloured internally, they are considered sound.

Immature damaged soybeans are characterized by a green exterior appearance in conjunction with green discoloration penetrating the cotyledon. Examination of the cotyledons is determined by cutting the soybeans in cross section. For grading purposes, immature damaged soybeans are considered as part of the "Total Damage" grade specification.

Shrivelled are soybeans which are underdeveloped, thin and wrinkled over its entire surface. If the soybean is shrivelled, small and flat, it has no oil value and is considered *Damaged*.

Foreign material is any material that is not soybean grains or fragments of soybean grains.

Splits include split soybeans, broken seeds that are less than three-quarters of the whole seed, and cotyledons that are loosely held together by the seed coat.

Soybeans of others colors are soybeans that have green, black, brown, or bicolored seed coats. Soybeans that have green seed coats will also be green in cross section. Bicolored soybeans will have seed coats of two colors, one of which is brown or black, and the brown or black color covers 50 percent of the seed coats. The hilum of a soybean is not considered a part of the seed coat for this determination.

3. REFERENCE

Standard and specification for soybeans, soybean oil and soybean meal-American Soybean Association
Codex Standard for certain pulses grains (Codex Stan 171-1989, latest version).

Canada Grain Commission: Official grain grading guide- Soybeans

Regulation governing the tolerance of certain seeds in certain agricultural products: South Africa Govt
Notice No. R.1225, 4 October 2002 (latest version).

4. PRODUCT SPECIFICATION

4.1 General requirements

The commodity shall meet following quality characteristic requirements;

- Shall be safe and suitable for human consumption.
- Shall be free from abnormal flavours, odours, and living insects.
- Shall be free from filth (impurities of animal origin, including dead insects) in amounts which may represent a hazard to human health.
- Only authorized insecticides (e.g. phosphine) may be used for fumigation control. Where needed, fumigation shall be performed by certified operators and as specified in the GAFTA Standard for Fumigation.

4.2 Toxic or noxious seeds

On-site visual check for the toxic seeds shall be performed.

The commodity shall be free from the following toxic or noxious seeds in amounts which may represent a hazard to human health. See Table 1 for tolerance of certain seeds.

– *Crotalaria (Crotalaria spp.)*, Corn cockle (*Agrostemma githago* Linn., *Machai Lallium remulenum* Linn.), Castor bean (*Ricinus communis* L.), Jimson weed (*Datura fastuosa* Linn and *Datura stramonium* Linn.), Mexican Prickly Poppy (*Argemone mexicana*), and other seeds that are commonly recognized as harmful to health.

4.3 Contaminants

4.3.1 Heavy metals

Soybean shall be free from heavy metals in amounts which may represent a hazard to health.

4.3.2 Pesticide residues

Soybean shall comply with those maximum residue limits established by the Codex Alimentarius Commission for this commodity.

4.3.3 Mycotoxins

Soybean shall comply with those maximum mycotoxin limits established by the Codex Alimentarius Commission for this commodity.

4.3.4 Other contaminants

The commodity shall be free from other contaminants in amounts which may represent a hazard to health.

4.4 Non-GMO Status

The commodity shall comply with Non-GMO crop if required by the recipient Country or regulations.

4.5 Hygiene

It is recommended that the commodity covered by the provisions of this specification be prepared and handled in accordance with the appropriate sections of the Recommended International Code of Practice – General Principles of Food Hygiene (CAC/RCP 1-1969), and other Codes of Practice recommended by the Codex Alimentarius Commission which are relevant to this commodity.

When tested by appropriate methods of sampling and examination, the commodity shall:

- Be free from micro-organisms in amounts which may represent a hazard to health
- Be free from parasites which may represent a hazard to health
- Not contain any substance originating from pathogenic micro-organisms, including fungi, in amounts which may represent a hazard to health

5. PACKAGING AND MARKING

The commodity shall be packed in a suitable PP woven bag complying with the packaging and marking requirements separately available under “4.5 to 90 kg PP woven bag specification (with or without PE inner liner) packaging specification” on <http://foodqualityandsafety.wfp.org/specifications>.

6. SHELF LIFE

Shelf life requirement of the commodity shall be marked if required by a receipt country and/or contractual agreement.

7. STORAGE

The commodity covered by the provision this specification shall be stored under dry, ventilated and hygienic conditions and far from all sources of contamination.

8. ANALYTICAL REQUIREMENTS

As per contractual agreement, WFP will appoint an inspection company that will check that the commodity matches requirements specified in Table 1. Additional tests may be defined in case further quality assessment is required. WFP may reserve the right to change the testing plan when required.

Table 1: List of compulsory analyses/tests and reference method

No	Analyses/tests	Limit	Reference method (or equivalent)
1	Moisture content	14.0% max	ISO 665:2000
2	Organoleptic	Clean and bright appearance, Natural odour	<i>Organoleptic</i>
3	Heat-damaged kernels	0.5% max	<i>Visual</i>
4	Damaged kernels (total)	3.0% max	<i>Visual</i>
5	Foreign material	2.0% max	<i>Visual</i>
6	Splits	20.0% max	<i>Visual</i>
7	Soybeans of other colors	2.0% max	<i>Visual</i>
8	Live insects	Nil	<i>Visual</i>
9	GMO	As per contract and/or destination country regulation (if required)	ISO 21569; ISO 24276
10	Visual examination of toxic or noxious seeds - Crotonia (<i>Crotalaria spp.</i>) - Jimson weed (<i>Datura spp.</i>) - Castor bean (<i>Ricinus communis</i> L.) - Corn cockle (<i>Agrostemma githago</i> L.)	Max. 1 seed per 1kg	Visual examination on one kg sample (size of sample as per GAFTA sampling rules)
	- Mexican Poppy (<i>Argemone mexicana</i>) - Cocklebur ¹ (<i>Xanthium species</i>) - Field bindweed (<i>Convolvulus spp.</i>) - Darnel Ryegrass (<i>Lolium temulentum</i>) - Morning glory (<i>Ipomoea purpurea</i>)	Max. 7 seeds per 1kg	

¹ Cocklebur one pod usually has 2 seeds.