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**Sunflower seeds for oil extraction —
Specification**

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Foreword

Rwanda Standards are prepared by Technical Committees and approved by Rwanda Standards Board (RSB) Board of Directors in accordance with the procedures of RSB, in compliance with Annex 3 of the WTO/TBT agreement on the preparation, adoption and application of standards.

The main task of technical committees is to prepare national standards. Final Draft Rwanda Standards adopted by technical committees are ratified by members of RSB Board of Directors for publication and gazettelement as Rwanda Standards.

DRS 587 was prepared by Technical Committee RSB/TC 006, *Edible fats and oils*.

Committee membership

The following organizations were represented on the Technical Committee on *Edible fats and oils* (RSB/TC 006) in the preparation of this standard.

Masaka Creamery

Mount Meru SOYCO

MINIMEX

Rwanda Food and drugs authority (RFDA)

Ministry of Agriculture and Animal resource (MINAGRI)

Rwanda Consumer's Rights Protection Organization (ADECOR)

INNOPRO Ltd

Rwanda Standards Board (RSB) – Secretariat

Sunflower seeds for oil extraction — Specification

1 Scope

This draft Rwanda standards specifies the requirements, sampling and test methods for sunflower (*Helianthus annuus*, L.) seed for oil extraction.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 658:2002; Oilseeds — Determination of content of impurities

RS ISO 659; Oilseeds — Determination of oil content (Reference method)

ISO 665; Oilseeds — Determination of moisture and volatile matter content

RS CXC1; General principles of food hygiene

ISO 16050, Foodstuffs — Determination of aflatoxin B₁, and the total content of aflatoxin B₁, B₂, G₁ and G₂ in cereals, nuts and derived products — High performance liquid chromatographic method

RS ISO 21294, Oilseeds — Manual or automatic discontinuous sampling

RS ISO 605 Pulses — Determination of impurities, size, foreign odours, insects, and species and variety — Test methods

3 Terms and definitions

For the purposes of this standard, the following terms and definitions apply.

3.1

sunflower seeds

seeds obtained from the sunflower (*Helianthus annuus*, L). plant

3.2

foreign matter

any organic or inorganic matter other than sunflower seed, and includes loose and empty shells (hulls, husks)

3.3

immature or shrivelled seeds

sunflower seeds that have indications of lack of maturity or full development.

3.4

damaged seeds

seeds that are damaged mechanically, or by mould or insects, or those showing internal discoloration of seeds materially affecting their quality.

pest damaged, discolored, stained, rotten and diseased and broken seeds

3.5

dehulled seeds (skinned)

sunflower seeds that have the hull completely removed from the sunflower kernel

4 Requirement

4.1 General requirement

Sunflower seeds for oil extraction shall be:

- a) reasonably dry and uniform in size;
- b) free from other edible/non-edible seeds;
- c) free from foreign odours; and
- d) free from living and dead insects, moulds, mites, insect fragments, excrement and rodent contamination, insect fragments and damage caused by insect pests visible to the naked eye.

4.2 Specific requirements

Sunflower seeds for oil extraction shall comply with specific requirements given in Table 1 when tested in accordance with the test methods specified therein;

Table 1— Specific requirements for sunflower seeds for oil extraction

S/N	Parameter	Requirement			Test Method
		Grade 1	Grade 2	Grade 3	
i.	Moisture content, % (m/m), max	10			ISO 665
ii.	Oil content on moisture free basis, % (m/m), min.	42	36	30	RS ISO 659
iii.	Acidity of extractable oil, expressed as Oleic acid content, %max.	2	3	3	ISO 729
iv.	Foreign matter/impurities, % m/m, max	1	1	2	ISO 658
v.	Immature/ Shriveled, % (m/m), max	1	2	2	RS ISO 605
vi.	Damaged seeds %(m/m), max	1	1	2	
vii.	Dehulled seeds, %(m/m), max	1	1	2	

5 Contaminants

5.1 Heavy metal

Sunflower seeds for oil extraction shall comply with maximum heavy metal limits given in table 3 below:

Table 3— Heavy metal contaminant

S/N	Heavy metal	Maximum limit (mg/kg)	Test method
i.	Lead (Pb)	0.05	AOAC 999.11
ii.	Cadmium (Cd)	0.05	
iii.	Arsenic (As)	0.1	RS ISO 6634

5.2 Pesticide residues

Sunflower seeds for oil extraction shall comply with maximum residue limits as established by Codex Alimentarius Commission online database for pesticide residues for this commodity

5.3 Aflatoxin

Aflatoxin level for sunflower seeds for oil extraction shall not exceed maximum limits as given in Table 3 when tested in accordance with test method specified therein:

Table 3- Aflatoxins limits for sunflower seeds for oil extraction

Aflatoxins	Maximum limit (µg/kg)	Test Method
i) Total aflatoxin (B1,B2,G1,G2)	10	ISO 16050
ii) Aflatoxin B1	5	

6 Hygiene

Sunflower seeds for oil extraction shall be grown in accordance with Good Agricultural Practices, handled and stored in accordance with RS CXC1

7 Sampling

Sampling of sunflower seeds for oil extraction shall be done in accordance with RS ISO 21294.

8 Packaging

Sunflower seeds for oil extraction shall be packed in suitable food grade packaging materials which ensure that the safety and quality requirements specified in this standard are maintained throughout the shelf life of the product.

9 Labelling

In addition, each container/packet of product shall be legibly and indelibly marked with the following information:

- a) Name of the product;
- b) Grade
- c) Trade name or brand, if any;
- d) Name, address of the producer and/or seller;
- e) Batch or lot number;
- f) Date of packing;
- g) Net weight in metric unit;
- h) Country of origin;
- i) Year of harvest

10 Storage and Transportation

10.1 Storage

Sunflower seeds for oil extraction shall be stored in dry and well-ventilated environment and stacked on pallets to avoid moisture ingress.

10.2 Transportation

Sunflower seeds for oil extraction shall be transported in well secured containers to avoid contamination, loss and spoilage

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