NATIONAL STANDARD OF UKRAINE

OILY FLAX SEEDS FOR PROCESSING

Specifications

DSTU 4967:2008

The publication is official

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PREFACE

1 DEVELOPED: Institute of Oil Crops of the Ukrainian Academy of Agrarian Sciences (IOK of the Ukrainian Academy of Agricultural Sciences)

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with

DSTU 4967:2008

NATIONAL STANDARD OF UKRAINE

OILY FLAX SEEDS FOR PROCESSING

Specifications

OILY FLAX SEEDS FOR PROCESSING

Technical conditions

SEEDS OF OIL FLAXSEED FOR PROCESSING

Specifications

Effective from 2010-07-01

1 SCOPE OF APPLICATION

This standard applies to linseed, which is harvested and supplied for industrial processing into products for technical and food purposes and for export. Product safety requirements are outlined in sections 6 and 7.

2 NORMATIVE REFERENCES

This standard contains references to the following normative documents: DSTU 2423–94 Vegetable oils. Production. Terms and definitions DSTU 2575–94 Vegetable oils. Raw materials and processed products. Quality indicators. Terms and conditi value

DSTU 4811:2007 Oilseeds. Methods of moisture determination DSTU1)
Seeds of agricultural crops. Terms and definitions of concepts DSTU ISO 729:2005
Oilseeds. Determination of oil acidity DSTU ISO 3961:2004 Animal and vegetable fats and oils. Determination of iodine number DSTU ISO 6651:2003 Animal feed. Determination of the content of aflatoxin B1 DSTU ISO 10565:2003
Oilseeds. Simultaneous determination of oil and moisture content. Spectroscopy method using pulsed nuclear magnetic resonance
DSTU ISO 14181:2003 Animal feed. Determination of residues of organochlorine pesticides. Gas chromatography
method DSTU EN 1528-1–2002 Fatty food products. Determination of pesticides and polychlorinated bife-nil (PCB). Part 1. General provisions (EN 1528-1:1996, IDT)

[1)] Under consideration.

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DSTU EN 12955–2001 Food products. Determination of aflatoxin B1 and the sum of aflatoxins B1, B2, G1 and G2 in cereals, hard-skinned fruits and products derived from them. The method of high-performance liquid chromatography using post-column derivatization and purification on an immune column GOST 12.1.005–

88 SSBT. General sanitary and hygienic requirements for the air of the working area (SSBP. General sanitary and hygienic requirements for the air of the working area)

GOST 12.4.011–89 SSBT. Means of protection of workers. General requirements and classification (SSBP. Protective equipment for workers. General requirements and classification)

GOST 17.2.3.02–78 Nature protection. Atmosphere. Rules for establishing permissible emissions of harmful substances by industrial enterprises (Protection of nature. Atmosphere. Rules for establishing permissible emissions of harmful substances by industrial enterprises)

GOST 2226–88 Paper bags. Technical conditions (Paper bags. Technical conditions) GOST 5475–69

Vegetable oils. Methods for determining the iodine number (Oils. Methods for determining the iodine number) GOST 10852–86

Oilseeds. Acceptance rules and methods of sampling (Oil seeds. Acceptance rules and sampling methods)

GOST 10853–88 Oilseeds. The method of determining contamination by pests (Seeds oily Method for determining infestation by pests) GOST 10854–

88 Oilseeds. Methods of determining weedy, oily and specifically considered impurities (Oilseeds. Methods of determining trashy, oily and specially considered impurities) GOST 10857–64 Oilseeds. Oiliness determination methods

(Oilseeds. Oiliness determination methods) GOST 10858–77 Oilseeds. Industrial raw materials. Methods of determining the acid

number of oil (Seeds of oil crops. Industrial raw materials. Methods of determining the acid number of oil) GOST 13496.20–87 Fodder, compound fodder raw materials. The method of determining the final amounts of pesticides (Compound

feed, compound feed raw materials. The method of determining the residual amounts of pesticides)

GOST 14192–96 ÿÿÿÿÿÿÿÿÿÿ ÿÿÿÿÿÿ (Marking of cargoes) GOST

18225–72 Technical fabric bags. Technical conditions (Technical fabric bags. Technical conditions) GOST 19317–73 Fabric product

bags. Technical conditions (Textile grocery bags. Technical conditions) GOST 26929–94 Food raw materials and products. Sample

preparation. Mineralization for determining the content of toxic elements (Raw materials and food products. Preparation of samples. Mineralization for determining the content of toxic elements) GOST 26932–86 Food raw materials and products. Lead determination methods (Raw

materials and products food Methods for determining lead) GOST

27988–88 Oilseeds. Methods for determining color and smell (Oil seeds. Method d determination of color and smell)

GOST 28001–88 Fodder grain, its processing products, compound feed. Methods for determining mycotoxins: T-2 toxin, zearalenone (F-2) and ochratoxin A (Forage grain, its processing products, compound feed. Methods for determining mycotoxins: T-2 toxin, zearalenone (F-2) and ochratoxin A) GOST 30178–96 Raw materials and food products. Atomic

absorption method for determination of toxic elements (Raw materials and food products. Atomic absorption method for determination of toxic elements).

3 TERMS AND DEFINITIONS

The terms and their definitions in this standard are used in accordance with DSTU 2423, DSTU 2575, DSTU1) "Seeding of agricultural crops. Terms and definitions of concepts".

1) Under consideration.

4 CLASSIFICATION

4.1 Flax seeds harvested and supplied, depending on acid and iodine numbers are divided into food (for the production of food products) and technical (for the production of technical products) according to table 1.

Table 1 — Classification of linseed oil

Purpose seed	The acid number of the oil, mgKOH/g in seeds	Iodine number of oil, gJ2/100 g
Kharchova	No more than 5.0 Do not rate	
Technical	They do not regulate	Not less than 170.0

Note. Technical linseed oil seeds are allowed to be prescribed for food purposes under the conditions of proving in time processing of the quality of the produced oil to regulatory requirements documents

5 TECHNICAL REQUIREMENTS

5.1 Basic norms, according to which the calculation is carried out for linseed oil, which is prepared are poured and supplied, indicated in table 2.

Table 2 — Basic standards for linseed oil harvested and supplied

Name indicator	Norm	Method controlling
Humidity, %	9.0	According to DSTU 4811, DSTU ISO 10565
Garbage admixture, %	2.0	According to GOST 10854
Oily impurity, %	4.0	According to GOST 10854
Oil content, %*	35	According to DSTU ISO 10565, GOST 10857
Damage by pests	Not allowed, except for damage tick no higher than II degree	According to GOST 10853
* In dry matter.		

5.2 Limiting standards for linseed oil, which are harvested, are indicated in table 3.

Table 3 — Limiting standards for linseed oil harvested

Name indicator	Norm	Method controlling
Humidity, %: - no more than - not less than	 13.0 8.0	According to DSTU 4811, DSTU ISO 10565
Garbage admixture, %, not more than	5	According to GOST 10854
In particular, castor seeds	Is not allowed	
Oily impurity, %, not more than	10.0	According to GOST 10854
Affected by pests	Not allowed except tick damage not higher than II degree	According to GOST 10853
Note. According to the agreement between the consumer and the supplier, the moisture content and the content of waste admixture in the harvested oil flax seeds are allowed to exceed the limiting norms if it is possible for the consumer to bring such seeds to the norms provided for in table 3.		

5.3 Limiting standards for linseed oil supplied for industrial processing are indicated in Table 4.

Table 4 — Limiting standards for linseed oil supplied for industrial processing

Name indicator	Norm	Method controlling
Humidity, %: — not more than — not less than	8.0 10.0	According to DSTU 4811, DSTU ISO 10565
Garbage admixture, %, not more than	3.0	According to GOST 10854
In particular, castor seeds	Is not allowed	
Oily impurity, %, not more than	5.0	According to GOST 10854
Affected by pests	It is not allowed, except for tick damage not higher than II degree	According to GOST 10853

5.4 Oil flax seeds intended for harvesting and supply must be unheated, in a healthy state, have the color and smell characteristic of normal seeds (without musty, moldy and extraneous odors).

5.5 The content of pesticides, toxic elements and mycotoxins in linseed should not exceed the permissible levels established by MBTySN No. 5061 [1] and DSanPiN 8.8.1.2.3.4-000 [2], set out in Table 5. Table **5** — Permissible levels of toxic elements, mycotoxins, pesticides in linseed

Name indicator	Maximum permissible levels, mg/ kg, not more than	Control method
Toxic elements: lead	1.0	According to GOST 26932, GOST 30178
Mycotoxins:		
aflatoxin B1	0.005	According to DSTU EN 12955, MR 2273 [3], MU 4082 [4]
zearalenone	1.0	According to GOST 28001, MR 2964 [5]
T-2 toxin	0.1	According to GOST 28001, MU 3184 [6]
deoxynivalenol	1.0	According to MU 5177 [7], MR 3940 [8]
Pesticides:		
HCCG is the gamma isomer	0.4	According to DSTU EN 1528-1, DSTU ISO 14181, GOST 13496.20
DDT	0.1	
heptachlor	0.1	

5.6 The content of radionuclides in linseed is regulated in accordance with GN 6.6.1.1-130 [9], it should not exceed the permissible levels: 137Cs — 50 Bq/kg; 90Sr — 20 Bq/kg.

5.7 The requirements for the quality indicators of linseed oil that are exported are established in the agreement contracts (contracts) between the supplier and the buyer.

5.8 Composition of garbage and oily admixtures

5.8.1 Garbage admixture includes: a) the entire passage through a sieve with holes with a diameter of 1.0 mm; b) in the residue on a sieve with holes with a diameter of 1.0 mm:

1) mineral admixture — lumps of soil, pebbles, slag, etc.; 2) organic impurities - the remains of leaves, stems, pods, etc.; 3) seeds of all wild and cultivated plants, except those classified as oily impurities; 4) spoiled - linseed with an obviously spoiled kernel.

5.8.2 Oily linseeds in the residue on a sieve with holes with a diameter of 1.0 mm are classified as oily admixture: — beaten, crushed and spoiled by pests; — germinated or with clear signs of germination; — damaged — with a changed core color as a result of drying, self-heating or damage by diseases.

6 SAFETY REQUIREMENTS

6.1 The air in the working area when working with linseed must meet the requirements GOST 12.1.005.

6.2 When working with linseed, workers must be provided with sanitary clothes and sanitary shoes according to DNAOP 0.00-3.01 [10], DNAOP 1.8.10-3.09 [11], NAOP 1.8.10-3.06 [12]. **6.3** Workers must be provided with personal protective equipment in accordance with GOST 12.4.011. **6.4** When working with linseed, it is necessary to comply with the requirements set forth in [13].

7 ENVIRONMENTAL PROTECTION REQUIREMENTS

7.1 Monitoring compliance with the norms of emissions of harmful substances into the atmosphere must be carried out in accordance with the requirements of GOST 17.2.3.02 and DSP 201 [14].

7.2 Protection of the soil from pollution by household and industrial waste is carried out accordingly to the requirements of SanPiN 42-128-4690 [15].

8 PACKAGING AND LABELING

8.1 Oil flax seeds are packed in clean, dry, pest-free, odorless bags in accordance with GOST 19317 and GOST 2226 for edible seeds and in accordance with GOST 18225 and GOST 2226 for technical seeds.

8.2 Marking of transport containers - in accordance with GOST 14192. Each unit of transport container is marked with a stamp or pasting of a label, which contains: 1) the name of the product; 2) purpose of products (food or technical); 3) net mass (for unpackaged seeds); 4) the number of packaging units and the net mass of the packaging unit (for packaged seeds); 5) batch number; 6) month and year of harvest; 7) storage conditions; 8) designation of this standard; 9) name, address, telephone number of the manufacturer and place of manufacture. **8.3** Oil flax seeds intended for export are packed and labeled in accordance with the requirements, specified in the agreement (contract).

9 RULES OF ACCEPTANCE

9.1 Acceptance rules - according to GOST 10852.

9.2 Each batch of linseed harvested and supplied for industrial processing must be accompanied by a document on quality and compliance with the norms of this standard with a mandatory indication of the purpose according to Table 1 and determination of acid and iodine numbers

9.3 Periodicity of monitoring the content of toxic elements, mycotoxins, residual content of pesticides, radiological indicators - in accordance with the requirements of MR 4.4.4-108 [16].

10 CONTROL METHODS

10.1 Sampling — in accordance with GOST 10852.

10.2 Determination of smell and color - according to GOST 27988.

10.3 Determination of humidity — according to DSTU 4811, DSTU ISO 10565.

10.4 Determination of garbage and oily impurities - according to GOST 10854.

10.5 Determination of damage by pests - according to GOST 10853. **10.6**

Determination of seed oiliness - according to DSTU ISO 10565, GOST 10857. **10.7** Determination

of acid number of oil in seeds - according to DSTU ISO 729, GOST 10858.

10.8 Determination of iodine number — according to DSTU ISO 3961, GOST 5475.

10.9 Preparation of samples for determination of toxic elements — according to GOST 26929.

10.10 Determination of the mass fraction of toxic elements: lead — according to GOST 26932, GOST 30178 and mycotoxins: aflatoxin B1 — according to MR 2273 [3]; MU 4082 [4], zearalenone — according to GOST 28001, MR 2964 [5]; T-2 toxin — according to GOST 28001, MU 3184 [6]; deoxynivalenol - according to MU 5177 [7], MR 3940 [8].

10.11 Determination of radionuclides — according to MU 5778 [17], MU 5779 [18]. **10.12**

Determination of the residual content of pesticides — according to DSTU EN 1528-1, DSTU ISO 14181, GOST 13496.20.

11 TRANSPORTATION AND STORAGE

11.1 Flax seeds are transported in bulk or packed in accordance with 8.1 of all types of transport in accordance with the rules of transport in force on the specified mode of transport.

11.2 Oil flax seeds are placed and stored in granaries in accordance with sanitary regulations rules and conditions of storage, approved in the prescribed manner.

11.3 Vehicles and grain storage facilities must be clean, dry, without extraneous odors, not infested with pests of grain stocks.

11.4 During the placement, transportation and storage of linseed, the conditions of humidity and clogging given in tables 6 and 7 are taken into account.

Table 6 — Moisture status of linseed oil

Seed condition	Humidity, %
dry	Not more than 8.0
Medium humidity	From 8.0 to 10.0 inclusive.
wet	» 10.0 » 13.0 »
Moist	Over 13.0

Table 7 — Conditions of flax seed contamination

oily

Seed condition	Garbage admixture, %	Oily admixture, %
Clean	Not more than 2.0	Not more than 3.0
Medium purity	From 2.0 to 4.0 incl.	From 3.0 to 5.0 inclusive.
Rubbish	Above 4.0	Above 5.0

11.5 For temporary storage for a period of up to 1 month, linseed with a moisture content of no more than 10.0%, a content of trash admixture of no more than 4.0% and an oily admixture of no more than 5.0% must be placed in the granary.

11.6 For long-term storage for a period of 1 month, linseed with a moisture content of no more than 8.0%, a content of garbage admixture of no more than 2.0%, and an oil admixture of no more than 3.0% must be placed in the granary.

11.7 Oilseeds of linseed with a moisture content of more than 10.0% must be stored on the ground for no more than a day.

12 MANUFACTURER'S WARRANTIES

12.1 The manufacturer guarantees the compliance of oil flax seeds with this standard, provided that following the rules of storage and transportation.

12.2 Warranty period of validity — 2 years.

APPENDIX A
(reference)

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16 MR 4.4.4-108–2004 Methodological recommendations. Periodicity of control of food raw materials and food products according to safety indicators, approved by the Ministry of Health of Ukraine on July 2, 2004 No. 329.

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