

## **Control of Product Quality and Safety Indicators at the Production Enterprise**

**B. T. Tursunov**

*Assistant of the Department of "Metrology Standardization and Product Quality Manager"  
of Andijan machine-building institute*

**Abstract:** This article explains and gives recommendations on the control of quality and safety indicators of products at the production enterprise on the example of cotton and vegetable oils.

**Keywords:** quality, indicator, product, control, feature.

Nutritional fat is one of the foods necessary for human consumption. It serves as an energy source for a living organism. A person spends a lot of energy in the activities of everyday life. It takes about a third of the energy in the account of fats. The energy-giving capacity of 1 gram of fat is 37.7 kJoule.

The physiological significance of fats is that it contains phosphates, vitamins, highly unsaturated fatty acids that do not replace a place, and other active substances necessary for human life. They are involved in all the processes necessary for life activities [1].

The oil and oil industry is one of the leading sectors of the food industry of the Republic of Uzbekistan, providing the population and the national economy with refined vegetable oils, fats, as well as products made from them, such as margarine, mayonnaise, fatty acids and soap.

The oil and oil industry accounts for about 40% of the food produced in our country. Since the development of the oil and oil industry was associated with the cultivation of cotton, oil and oil enterprises were built in places close to raw materials. They are present in all regions of our Republic.

Vegetable oils play an important role in a person's food. These oils are high-calorie and are well digested in the human body. They are widely used in the food industry. Vegetable oils are obtained from sunflower, cotton, oil-derived flax, hemp, sesame, poppy, dumbbell oats, nuts, almonds, beans, ground walnuts, soybeans, olive fruit, among others. These include the most important oils used for food: sunflower, cotton, olive, sesame oil, among others. Those that are used for technical purposes are flax, cannabis seeds, kanakunjut seeds, mushroom oil, etc. Of these, flaxseed and cannabis seed oil also have nutritional value [2].

Oils are assessed according to their quality: color, taste, smell, transparency, moisture content, viscosity and other indicators. Refined oil should be odorless and tasteless, transparent. Hydrated and unrefined oils-must have a taste and aroma typical of the initial raw material. High and Grade 1 oil (top of the well) should be transparent; Grade 2 oil is allowed to be slightly dull.

**Table 1. Depending on the quality indicators and the degree of cleaning, refined cottonseed oil is produced in varieties and varieties below**

Yog'ning turi	Type	Universal product classification (UPC) code
Refined cottonseed oil obtained by the Press method		
- odorized	High	91 41 15 6 1 14
- odorized	First	91 41 15 6 2 14
- undisturbed	High	91 41 15 3 1 14
	High	91 41 15 3 1 99
- undisturbed	First	91 41 15 3 2 14
	First	91 41 15 3 3 99
- undisturbed	Second	91 41 15 3 3 99
Refined cottonseed oil obtained by Extraction method		
- odorized	High	91 41 15 6 5 14
- odorized an	First	91 41 15 6 6 14
- undisturbed	High	91 41 15 3 5 99
	First	91 41 15 3 6 99
	Second	91 41 15 3 8 99

Note:

1. The Universal classifier of the UPC-product contains 10 discharges.
2. UPC discharge mark:
  - 1.2. discharges: 91-food industry;
  - 3.4. razryads: 41-vegetable oils;
  - 5.6. discharges: 15-cottonseed oil;
  - 7 discharge: 6-degreased oil; 3 – degreased oil;
  - 8 discharge: 1.2. and 3. - high, first and second grade pessimized refined cottonseed oil without suitable:
  - 5.6. and 8. - refined cottonseed oil obtained by high, first and second rave extraction method respectively;
  - 9 discharges: - 14 packaged oil; 99-unpacked oil [3].

**Table 2. Quality indicators of vegetable oils**

№	Designation of indicators	Norms for refined cottonseed oil (pressed and extracted)					Control methods
		Deodorized		Deodorized			
		Supreme variety	First variety	Supreme variety	First variety	Second variety	
1	2	3	4	5	6	7	8
1	Smell	Odorless		Properties of refined cottonseed oil without additional odors			on GOST 5472
2	Taste	Taste of processed oil		Tasteless		Taste undetectable	
3	Transparency	Transparent					On GOST 5472

In the production of vegetable oil products in our country, quality and safety indicators are subject to requirements based on the following regulatory documents:

1. O'zdst 816: 2007 refined cottonseed oil.
2. GOST 5471-83. Vegetable oil. Rules for the selection and reception of samples.
3. SanPiN № 0138-03. Food insecurity and hygienic quality indicators, medical-biological requirements and sanitary standards [4].

In addition, regulatory documents are also used that are poured in the processes of production and commercialization of their vegetable fats (Table 3). In the production of vegetable oil products in our country, quality and safety indicators are subject to requirements based on the following regulatory documents:

Name of properties (parameters)	The name of the regulatory document for test methods (measurements)
<p><b><u>Cottonseed oil</u></b>  <b>Organoleptic indicators:</b>  Smell, taste, transparency  <b>Physico-chemical properties:</b>  Color  Acid number  Mass fraction of moisture and volatile substances  Mass fraction of non-fat mixtures  Soap in a quality test  Peroxide number  Temperature level of Extraction Oil</p>	<p>GOST 5472-50,   GOST 5477-93  GOST 5476-80  GOST 11812-66   GOST 5481-89  GOST 5480-59  GOST 26593-85  GOST 9287-59</p>
<p><b><u>Vegetable oil. Sunflower oil. Soybean oil</u></b>  <b>Organoleptic indicators:</b>  Smell, taste, transparency  <b>Physico-chemical properties:</b>  Acid number  Mass fraction of moisture and volatile substances  Mass fraction of non-fat mixtures  Soap in a quality test  Peroxide number  Temperature level of Extraction Oil  Mass fraction of phosphorus-containing substances  Color  Mass fraction of sterilizing substances</p>	<p>GOST 5472-50   GOST 5476-80  GOST 11812-66   GOST 5481-89  GOST 5480-59  GOST 26593-85  GOST 9287-59  GOST 7824-80  GOST 5477-93  GOST 5479-64</p>
<p><b><u>Unprocessed cottonseed oil</u></b>  <b>Organoleptic indicators:</b> smell  <b>Physico-chemical properties:</b>  Acid number  Mass fraction of moisture and volatile substances  Mass fraction of non-fat mixtures  Number of cough  Mass fraction of sterilizing substances  Color  Temperature level</p>	<p>GOST 5472-50   GOST 5476-80  GOST 11812-66   GOST 5481-89  GOST 5475-69  GOST 5479-64  GOST 5477-93  GOST 9287-59</p>

The composition, physical and chemical properties of cotton oil are characterized by the following indicators:

By the amount of fatty acids:

Stearic acid	1-2%
Palmitic acid	20-22%
Myristinic acid	1-1,3%
Oleic acid	30-35%
Linoleic acid	40-52%
Density 200s	918-935 kg/m <sup>3</sup>
Fracture index 200s	1,472-1,476
Kinematics squamous 200s	6,66·10 <sup>-6</sup> m/s
Number of soaps	189-199
Iodine number	110-116 g/y

Look at the character of the main waste and their combined behavior with reagents B refinement methods are conditionally divided into three groups: physical, chemical and physico-chemical [5-6].

The physical method includes tinting, centrifuging, filtering. Using these techniques, it serves to purify dissolved waste in a mechanical, colloidal state from the oil content.

The chemical method includes refining with sulfuric acid, hydration, methods for cleaning gossipol, alkaline refining, oxidation of Coloring substances. Using the method of refining with sulfuric acid, the oil is purified from phosphatides, proteins, coloring substances and decomposes fatty acids into sodium salts.

It serves to separate the hydrophilic substances contained in the oil using the hydration method. It cleans mainly free fatty acids and coloring pigments in oils and oils using the alkaline refining method.

The physico-chemical method includes cleaning using adsorbents, deodorizing, distillation, cleaning using selective solutions.

Adsorption refining serves to whiten oils.

Deodorizing serves to cleanse the specific taste, odorant substances contained in the oil.

Cleaning with selective Solutions serves to separate certain undesirable substances in the oil.

These methods are conditionally divided, since all methods can participate in the cleaning process. For example, in the process of alkaline refining, alkali enters into a reaction with fatty acids to form soap – this is a chemical method. The resulting soap absorbs the coloring pigments contained in the oil – this is a physicochemical method. The resulting soapstock is infused to separate it from the neutralized oil – this is a physical method [7-8].

## Conclusion

Modern market economy sets requirements for the quality of the manufactured products. Because in modern times, Khar kandai is the omon tribe of the firm, its status in the market of goods and services is determined by the level of cooperation. Competitiveness is a connection with two coursework – Bacho and the level of quality of products.

In the production of vegetable oil products in our country, quality and safety indicators are subject to requirements based on the following regulatory documents:

1. O'zdst 816: 2007 refined cottonseed oil.
2. GOST 5471-83. Vegetable oil. Rules for the selection and reception of samples.

3. SanPin № 0138-03. Food insecurity and hygienic quality indicators, medical-biological requirements and sanitary standards.

In addition, regulatory documents are also used that pour them in the processes of production and commercialization of vegetable oils.

### References

1. Toshpolatov M.M., Sharipov Q.A. - Product quality management. T.: TTPU, 2011, - 204 b.
2. Toshpolatov M.M. Distribution data for students in standardization, certification and Quality Management Science.- T.: TDTO, 2008, -67 b.
3. Aristov O.V. Upravlenie kachestvom.-M.: INFRA.- M, 2004.-240 s
4. Kovalev, A.I. Kak obustroit kachestvo produkcii / A.I. Kovalev / / Vse o kachestve. Otechestvennie razrabotki. - 2006. - Vipusk 39. - S, 3-12,
5. Kanives, A.N. Ekonomicheskyy analysis system menedjmenta kachestva promishlennogo predpriyatia / A.P. Kanives, L.V. Parkhomenko; pod nauch. Ed. B.I. Gerasimova. - Tambov: Izd-vo TGTU, 2005. - 144 P.
6. System kachestva. Sb. normativno-metodicheskix dokumentov. - M., Izd. standartov, 2012. - 128 P.
7. Batrikin, D.V. Upravlenie kachestvom na promishlennom predpriyatii / D.V. Batrikin I dr. Pod nauch. Ed. d-ra ekon. nauk, prof. B.I. Gerasimova. - M.: "Izdatelstvo Mashinostroenie-1", 2006. - 204 P.
8. Tursunov B. bibliometric analysis of iso 45001 occupational health and safety management systems //web of scientist international scientific research journal. – 2023.