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BASIC METHODS AND TECHNOLOGICAL SCHEMES FOR OBTAINING VEGETABLE OILS

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Abstract:

Objective. In world practice, there are two main ways to obtain vegetable oils, which are fundamentally different from each other. These, mechanical compression of the oil, are called the pressing method, and melt the oil using a light volatile organic solvent, or extraction method. These binary methods can be used separately independently or together in a specific order. When used last year, this method is called forpressing-extraction. Regardless of which method is used, each method is carried out according to a specific technological scheme.Technological scheme is that of technological processes that are logically inextricably linked with each other, performed in the necessary order.

Methods. Agrotechnical indicators of the device for extracting oil from seeds of oil crops OST 79.10.2-74 "zernoochistitelnie mashini, aggregate zernoochistitel nosushilnie complex. Software method I ispitaniy", OST en 63.01-99 " ispitaniya selskoxozyaystvennoy technical. Kombayni zernouborochnie. Software method I according to" ispitaniy, while energy indicators Tst 63.03:2001 "Ispitaniya selskohozyaystvennoy technical. Method energeticheskoy otsenki mashin " determined according to.

Results. The research of the technological system of storage of fatty raw materials and the quality of oil products produced from it is a scientific novelty of this work.

Conclusion. it is worth noting that the processes of storage of fatty raw materials have been studied. The advantages of oil extraction methods from fatty raw materials, oil output, the amount of oil to be taken into account and the amount of oils in Kunjara and Shrot, the method of obtaining high oil was selected, studied.

Keywords: cotton seeds, vegetable oils, extraction, forpressing-extraction, oilseeds, rafination, kernels, pressing.

Introduction. As a result of the new Agrarian Policy in the Republic, unilateral development in agriculture was stopped. Reforms in agriculture were carried out to develop the oil and oil industry and expand the arable land, increase productivity, apply new oil crops to the production of varieties of sunflower, peanut, maxsar, soybean and other oil crops, develop their agrotechnics in the short term and meet the needs of the population for vegetable oils in the result of the harvest.

The oil oil industry mainly produces sunflower, seeds, peanuts, beans, flax, garchitsa and kanakunjut oil from 7-8 different raw materials. In addition to these, indov, grape seeds, various fruits danagi, hemp, copra, etc. are also processed, the amount of which is 2.5% of the total fat obtained.

On October 27, 2020, the decree of the president of the Republic of Uzbekistan No. 6094 "on amendments and additions to certain documents of the president of the Republic of Uzbekistan"was signed.

According to him, it was established that cotton technical seeds are sold to local enterprises through the exchange, regardless of the organizational and legal form. It was determined that the enterprises participating in the exchange trade have a complete technological cycle of processing cotton technical seeds (core milling, hydrothermal processing, pressing, extraction, rafination, deodorization and packaging Tsex), as well as have the appropriate hygienic conclusion and certificates of conformity for the finished products reproduced at the enterprise.

Methods. The quality indicators of oilseeds, all technological parameters

related to these processes, studying the methods of their acceptance at the enterprise, storage, cleaning, preparation for the pressing process, extraction and oil extraction, are the issues of the correct conduct of settlement work, together with which ways to eliminate them in cases where a violation of technological processes occurs. Oilseeds, storage facilities and types of it, oilseeds processing oil extraction tenchological process and oil production enterprise.

Results. When technological operations are carried out, the processed product is under various external influences. These include the influence of mechanical, thermal, moisture, solvent and chemical reagents in their place.

Processes in performing one or another technological operation can be conditionally divided into basic and approach processes. It should be noted that in most cases, the approach processes have a strong effect on the general direction and final effect of the operation. For example, when squeezing oil, mechanical and hydrodynamic (oil leakage) processes are considered the main ones, which give an impetus to the occurrence of an approach process that converts mechanical energy into thermal energy at the expense of friction force. The approach of heat separation process the protein in Kunjara enhances chemical processes such as denaturation of substances, oxidation of oil, and diffusion evaporation of moisture.

The processes performed in the technological schemes of processing oilseeds by separating the shell from the core are made up of preparatory, basic, auxiliary and additional operations. The main operations include grinding oil seeds (milling), frying, pressing and extracting oil by extraction. Preparatory operations include receiving, drying, storing oilseeds, cleaning them from impurities and separating the ust shell from the core. Auxiliary operations, on the other hand, include driving the solvent from the shrot composition to extract the oil from the mistsella, regenerating and regenerating the solvent vapors. Additional operations include primary purification of forpress or extraction black oils, obtaining phosphatide concentrate, and separation of protein substances.

Table 1

Rafinated oil indicators obtained by the Press method

№	Name of indicators	Norms for refined oil obtained by the Press method				
		Desadoration-langan		Disadorated		
		High Type	First variety	High Type	First variety	Second grade
1	The number of Colors is not much in the Red Unit 35 in the yellow unit 35 - 79,9 in the yellow unit	5	8	5	8	14
2	Acid number, mg KOH/g not much	0,2	0,2	0,2	0,3	0,5
3	Mass fraction of moisture and volatile substances, not more than %	0,1	0,1	0,1	0,2	0,2
4	Mass fraction of non-fat mixtures (mass precipitate),%, not more	Not available				0,05
5	Soap (quality indicator)	Not available				

6	Iodine number gJ/100g	101-116	101-116	101-116	101-116	101-116
7	Non-saponifying substances are not high in %	1,0	1,0	1,0	1,0	1,0
8	Perekis number, mmol / kg, 0,5 "O", not much	10	10	10	10	Aniqlan-maydi
9	Determination of the presence (by quality)of solvent (gasoline) in oil	Not available				

Discussion. The inextricable connection of basic, preparatory, auxiliary and additional operations forms a technological scheme.

The following technological schemes are used to obtain vegetable oils in foreign and CIS countries:

1. Schemes to be completed by the pressing method: a) one-time pressing method using Auger presses; b) two-time pressing method using Auger presses; C) three - time pressing method using Auger presses.

According to the physico - chemical indicators, the refined oil obtained by the press method must comply with the requirements of Table 1.

Depending on the quality indicators and degree of purification, oil is produced in the following types and varieties (Table 2).

Table 2

Separation of oil obtained by the Press method into varieties depending on quality indicators and degree of purification

№	Type of oil	Type	OKP code
1	Desadorated	High Type	91 41 15 61 14
2	Desadorated	First variety	91 41 15 62 14
3	Disadorated	High	91 41 15 31 14
		High	91 41 15 31 99
4	Disadorated	First	91 41 15 32 14
		First	91 41 15 32 99
5	Disadorated	Second	91 41 15 33 99

2. Schemes to be completed by the extraction method: a) double pressing and extraction at the end; b) one-time pressing and extraction at the end; C) direct extraction. According to both schemes (B) methods are the most common, while Method 2-b is called the “forpressing - extraction” scheme. More than 85% of vegetable oils produced in our republic are obtained according to the same scheme.

According to the physico - chemical indicators, the refined oil obtained by the extraction method must comply with the requirements of the table.

Table 3

Rafinated oil indicators obtained by the extraction method

№	Name of indicators	Norms for refined oil obtained by the Press method				
		Desadoration-langan		Desadoration-langan		
		High Type	High Type	High Type	High Type	High Type
1	The number of Colors is not much in the Red Unit 35 in the yellow unit 35 -79,9 in the yellow unit	5	8	5	8	14
2	Acid number, mg KOH/g not much	0,2	0,2	0,2	0,3	0,5
3	Mass fraction of moisture and volatile substances, not more than %	0,1	0,1	0,1	0,2	0,2
4	Mass fraction of non-fat mixtures (mass deposition),%, not more	Not available				0,05
5	Soap (quality indicator)	Not available				
6	Iodine number gJ/100g	101-116	101-116	101-116	101-116	101-116
7	Non-saponifying substances are not high in %	1,0	1,0	1,0	1,0	1,0
8	Perekis number, mmol / kg, 0,5 "O", not much	10	10	10	10	Not detected
9	Determination of the presence (by quality)of solvent (gasoline) in oil	Not available	The solvent residue is determined (the color of the indicator tube is painted in light brown			
10	The spark temperature o C is not less	Not available	232	232	232	-

Depending on the quality indicators and degree of purification, oil is produced in the following types and varieties (Table 4).

Conclusion. In conclusion, it is worth noting that the use of the extraction method in the extraction of oil from oil seeds in different ways made it possible to obtain the most oil from raw materials. But at the same time, the use of various solvents during extraction forces to take measures to prevent explosion and poisoning, to strictly follow the rules of technical safety, labor protection, and fire prevention. At the same time, it is possible to clearly determine the advantage of the process of extracting oil by pressing and extraction.

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SIZE-EXCLUSION CHROMATOGRAPHY OF SOME POLYSACCHARIDE DERIVATIVES FROM NATURAL SOURCES

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Abstract:
Objective. In the article molar mass and structural properties some of natural polysaccharides and their derivatives were studied by Size-exclusion chromatography.
Methods. For investigation of electrostatic and polyelectrolyte properties of natural polysaccharides Exclusion liquid chromatography method was used.
Results. Polyelectrolyte and electrostatic effects of polysaccharide derivatives in Size-exclusion chromatography were suppressed by using of aqueous eluent containing salt solution.
Conclusion. As a result of the research, it was shown that many of polysaccharides are polyelectrolytes and determination of their molar mass parameters is complicated by electrostatic effects in Size-exclusion chromatography.
Key words: polysaccharides, carboxymethyl chitosan, galactomannan, exclusion chromatography, heparin, electrostatic effects, polyelectrolytes.

Introduction. Water-soluble derivatives of polysaccharides are widely used due to a wide range of their useful and unique properties in biomedicine, pharmaceuticals, cosmetology, agriculture, and other fields. Biologically active polysaccharides from natural raw materials include chitosan, carrageenan, arabinogalactan (AG), heparin, agar, fucoidan, etc. Agar and carrageenan are obtained by extraction from red and fucoidan from brown seaweeds, and the chains of green algae polysaccharide molecules have a heterogeneous structure with sugar residues, such as glucuronoxylorgamannans, glucuronoxylo-rhamnogalactans, and xyloarabino-galactans [1, 2]. They are considered potential biologically active substances and have immunomodulatory, antitumor, antiviral, and antibacterial properties [3]. The most widely used anticoagulant drug in modern medical practice is the natural glycosaminoglycan heparin, however, the use of heparin causes some side effects, such as bleeding, and heparin-induced thrombocytopenia. The anticoagulant activity of sulfated polysaccharides

raw materials include chitosan, carrageenan, arabinogalactan (AG), heparin, agar, fucoidan, etc. Agar and carrageenan are obtained by extraction from red and fucoidan from brown seaweeds, and the chains of green algae polysaccharide molecules have a heterogeneous structure with sugar residues, such as glucuronoxylorgamannans, glucuronoxylo-

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