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elza.gasanly@mail.ru**THE BENEFITS OF VEGETABLE OILS****Abstract**

Oilseeds have become an integral part of our lives. Oil plants are grown as demand for a particular product. In order to successfully grow such a crop, it is necessary to study all the specifics, and features of these plants.

Vegetable oils contain some of the fat-soluble vitamins. Sunflower oil contains physiologically active substances valuable and necessary for human nutrition: phosphatides, fat-soluble vitamins A, D, E, aromatic and flavoring substances, as well as the so-called saturated linoleic acids and the like. Oil cake waste from the fat industry is the best concentrated feed for livestock. The fruits and seeds of oilseeds contain proteins, which include many essential amino acids (lysine, tryptophan, cystine, arginine, etc.). Many of the oil plants are good honey plants. Fats are concentrated sources of energy. They provide somewhere around 80-85% of a person's energy reserves. Fats are a source of nutrients - fat-soluble vitamins, phospholipids, and vitamins. One tablespoon of vegetable oil helps to absorb vitamins A, E. (Andreev, 1982:78). Oilseeds of plants that are cultivated for the production of fatty oils are suitable for food and technical purposes. These are annual and perennial plants of various families, mostly herbaceous: sunflower, soybean, peanut, flax, etc.; tropical trees, for example: palm trees, cocoa tree, wax tree. Fatty oils are also obtained from the seeds of cotton, anise, cumin, almonds, walnuts, cedar pine, pits, peach, apricot, etc. Sunflower seeds contain up to 57% oil, soybeans -16-26%, oil flax 50%, sesame-47-64%,peanuts-42-56%,poppy seeds-45-56%, rapeseed-45-56% (Higgins, Best, Jones.1988: 57-61). Sunflower is the main oil plant in our country. Sunflower is a high-yielding crop suitable for mechanized cultivation and harvesting. The sunflower fruit, the achene, contains more than 55% oil. The shell, like husk, makes up 20-25% of the weight of the seeds. In the process of technological processing, the husk is separated from the kernel, as a result of which the oil content rises to 65-66%.

Keywords: *energy reserve, fats, phospholipids, tissue culture, pressing, extraction.*

Introduction

Vegetable oils can be obtained from a wide variety of plants. We know many plants, such as: sunflower, olives, corn, palm trees, coconuts. Oils from these plants, like many others, are being studied in different countries.

All crops that are raw materials for the oil production industry can be divided into two groups: oil plants, which are grown to produce other products, and then oils are obtained. The first includes sunflower, castor bean, rapeseed (Kuliev, 2014: 352).

The second group includes: cotton, flax, soybeans, peanuts, mustard, germ of grain crops, grape seeds, fruit seeds, etc.

Depending on the fat content in the kernel, all oilseeds are divided into three groups:

1) low-oil with a fat content of 15%-35% (soybeans) P9

2) medium oilseed with a fat content of 35%-55% (cotton)

3) high-oil crops with a fat content of 55% or higher (sunflower, flax, peanuts, etc.). Sunflower is the main oilseed plant in our country.

Before growing the corresponding plants and processing raw materials, it is necessary to estimate their cost, as well as calculate the amount of energy released by the oils. The determining factor here is the amount of oil that can be obtained per hectare of crops. Experiments with soybeans and sunflowers in the Midwest and southern Africa have shown that up to a ton of oil can be obtained per hectare, even if the extraction method is not the best. The oil content in the collected raw materials is 35-47% by weight. Two tons of oil are obtained from one hectare. (Galaktinova, 1989: 123).

The UK and Malaysia are leaders in the development of highly productive varieties of oil palm. Record yields were obtained, up to 14 tons of oil per hectare per year, which is 2-3 times higher than conventional varieties. These new varieties were quickly propagated using tissue culture techniques.

Palm oil is easier to obtain, can be harvested all year round, produces less waste that pollutes the environment, and one of the "wastes" from production is protein-rich animal feed. (Gurbanov, 2009: 360).

Vegetable oil can be used in pure form or mixed with diesel fuel for use in compression ignition engines. Many plant species synthesize hydrocarbons, which can be directly used as fuel or chemical raw materials.

Example: rubber obtained from cultivated *Hevea brasiliensis* trees. In recent years, serious attempts have been made to develop and cultivate plant varieties that synthesize hydrocarbons of lower molecular weight than rubber. American inventor Thomas Edison studied about 2000 plant species in this direction. While studying plants, he noted that many plants contained hydrocarbons, but only one or two of them had a molecular weight so high that they could, in principle, serve as a substitute for natural rubber from *Hevea*. Some plants, especially from the Euphorbiaceae family, accumulate hydrocarbons in latex with a molecular weight significantly lower than that of rubber. In Malaysia and Great Britain, oils are obtained from highly productive varieties of oil palm (Minkevich, 2019: 560). The resulting fuel from palm oil has a number of advantages over the production of ethyl alcohol from sugar or starch-containing raw materials. Palm oil is easier to obtain and can be harvested all year round. During production, less waste is generated; the basis of the "waste" of production is protein-rich animal feed (Wolf, Maleeva, 1969: 564).

Vegetable oil can be used in pure form or mixed with diesel fuel for use in compression ignition engines. However, the efficiency and durability of such machines increase if the oil is processed into methyl or ethyl esters. Many plant species synthesize hydrocarbons, which can be directly used as fuel or chemical raw materials. Of the latter, the best known is rubber obtained from cultivated *Hevea brasiliensis* trees.

Vegetable oils, vegetable fats are products extracted from plant raw materials and consisting of triglycerides of fatty acids and their accompanying substances. Phospholipids, free fatty acids, waxes, sterols, substances that impart color, etc. (Vasilev, 2017: 174).

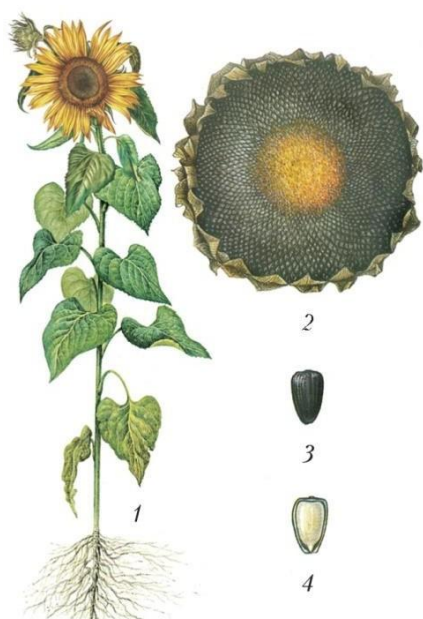
The raw materials for obtaining vegetable oils are:

Oilseed seeds (sunflower, soybean, rapeseed, cotton, flax, sesame, milk thistle, black cumin, mustard, poppy, etc.)

Fruits of oilseeds (palms, olives)

Oil-containing waste from the processing of vegetable raw materials (wheat germ, corn, rice, fruit seeds of cherries, grapes, apricots, melon seeds, pumpkin seeds, sea buckthorn).

Nuts (cedar, walnut, coconut, pistachio, hazelnut, almond).



To obtain vegetable oils, pressing and extraction methods are used. Pressing is a mechanical extraction of oil on screw presses. Screw presses are used, which can be divided into 3 groups: presses for preliminary oil removal (forepresses), presses for final extraction (expellers), dual-purpose presses (Andreev, 1979: 217).

However, pressing technology does not ensure complete oil extraction. The oil remaining after pressing is extracted by extraction, which is characterized by greater efficiency (losses are 1.5-2.5 times lower than with pressing). To remove mechanical impurities, methods of settling, centrifugation and filtration are used.

From a chemical point of view, such hydrocarbons are substances that are more reduced (Higgins, Best Jones, 1988: 57-61) than carbohydrates. Recently, plant varieties have been grown that synthesize hydrocarbons of lower molecular weight than rubber.

A large number of plant species have been studied to determine the possibility of introducing oilseeds and hydrocarbon-producing crops (Buchanan, et al; 1978).

Component	Rubber		Oilseeds		Oilseeds	
	I	II	I	II	I	II
Total dry matter	13.500	100	17.900	100	22.500	10
Total protein	1.485	11	1.610	9	1.350	6
Rubber	1.350	10	360	2	-	-
Oil	810	6	2.150	12	2.250	10

Only a few of the larger number of plant species studied were selected for more detailed study as potential producers of rubber (12 species), oil and rubber (10 species), oil (9 species), etc.

However, despite this, only about 55,106 tons of vegetable oils are produced worldwide today.

Conclusion

Oilseeds play an important role in human life, as they are used in medicine, food, technical and soap industries for the production of polishes and paints. These include: sunflower, cotton, cumin, palm, cedar pine, walnut fruits, corn, etc. (Huseynov, Shukurov 1992: 128).

Vegetable oil is a product necessary for human life. In the food industry, vegetable oils are suitable for making mayonnaise, etc. In the technical industry they are used for the production of

soap, polished paper, glycerin, glue, etc. Sunflower is a good honey plant, some of its species forms are used as an ornamental plant. Sunflower oil has many beneficial properties: it normalizes the functioning of the gastrointestinal tract and endocrine system, helps cleanse the liver and relieve inflammatory processes, and helps rheumatism and arthritis. Moderate consumption of sunflower oil regulates cholesterol levels in the blood. Sunflower oil contains a large amount of vitamin E, A and fatty acids, which have a good effect on the body, strengthening the structure of nails and hair. Vitamin A has antioxidant properties and protects cells from free radical damage.

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