

THE PRODUCTION OF ORGANIC RAPESEED OIL IN UKRAINE

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The properties of rapeseed oil have long been known, but only when the new varieties of rapeseed were bred, new ways of using this oil appeared - it started to be consumed in various dishes. Rapeseed is also widely used in the margarine industry.

Rapeseed and olive oil are very close in terms of their fatty acid composition. Like in other vegetable fats, rapeseed oil contains large amounts of unsaturated acids which are better absorbed by the body than saturated acids contained in animal fats. Moreover, the content of fats (35-50%) and protein (18-30%) in rapeseed is as good as in sunflower and better than in soya.

However, the world market is significantly saturated in food fats, therefore the demand for non food use of rapeseed is increasing, for example, the production of liquid fuels. Biofuel from rapeseed oil meets the standards for exhaust emissions of automobiles.

Rapeseed also plays a role as a fodder crop. It is used for green fodder, hay and grass meal in its pure form or mixed with other grains. Valuable in composition and quality of protein, seed meal and oil cake are obtained after processing the seeds. The protein contained in the rapeseed is similar in its composition to the protein of eggs, cow's milk and butter.

In Ukraine new kinds of food products appear. Same is true about various types of vegetable oils. Vegetable oil is used in almost all meals. Different people use different types of oil. One of the most popular - is rapeseed oil.

Today it is increasingly used in the production of baby food and organic cosmetics.

Moreover, compared to soybean oil, which influenced by the air may acquire an unpleasant odor, rapeseed oil, thanks to advanced technology, maintains natural odor and look. Rapeseed oil is famous for its fatty acids. Omega-3 and Omega-6 acids are very beneficial to health. They improve the function of the gastrointestinal tract and blood circulatory system. Vascular tone significantly increases.

People who regularly consume rapeseed oil, should not be afraid of blood clots, as components of vegetable oil prevent thrombosis. In addition, the body inflammation in such people considerably slower. They have a strong immunity system. Besides fatty acids, rapeseed oil contains many vitamins that are known to play an important role in promoting health. One of such vitamins - is vitamin E. Without it, the human endocrine system begins to fail, and muscular system and nerve cells become weak.

One tablespoon of rapeseed oil per day fully covers the need for vitamin E. In addition to the abovementioned substances, rapeseed oil contains a few more which the human body cannot synthesize on its own - phospholipids, linoleic and linolenic acids. These substances help reduce cholesterol level in the body and strengthen vessel walls.

Due to all these qualities, rapeseed oil is becoming increasingly popular.

The quality of oil depends on the seed used and the method of their processing and cleaning. Typically, vegetable oils are produced by pressing (cold or hot) - oil is extracted from crushed and boiled corn on special presses. Pressing can be performed one or more times. The intensity of pressure influences how much cake the oil will contain (6-14%).

There is another way to get oil from rapeseed. When the prepared rape seed is processed under the pressure of 2-4 atm and at a temperature of 90-100°C. Through the screw transporter the grain runs into the heater, where it gets heated and mixed thoroughly, then using the screw press the oil is obtained at the pressure of 190-230 atm.

After being pressed the oil undergoes several stages of cleaning, including extraction and refining. The extraction of oil is obtained by passing the gasoline through the crushed cake. Due to its soluble properties (the interaction with nonpolar organic solvents), the oil is completely removed from the cake. After distillation, gasoline undergoes purification.

During the refining stage all impurities and related substances such as free fatty acids, pigments, odorous substances, phosphatides and other are removed from the oil. Depending on how well refined is the oil, it is divided into raw (which after pressing undergoes only filtration), unrefined and refined. According to the requirements of GOST 8988-77 only refined rapeseed oil, which has a dark brown color with a slight greenish tint and peculiar odor and taste is available for sale.

The overall production of rapeseed in the world among the oil plants takes the second place, giving priority only to soybean - from 471 million tons of oilseed soybeans account for 58% and rapeseed - 13%. The situation with the production and marketing of rapeseed and its products in the world in recent years is relatively stable - dynamics of areas and production volumes are fluctuating, but to a very low extent [4].

Dynamics of rapeseed production in the world has a strong positive trend (Fig. 1.1).

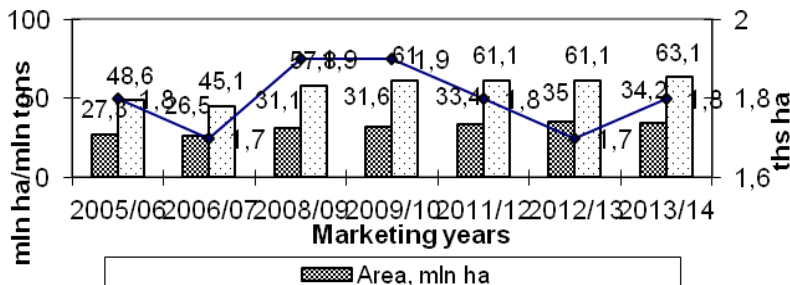


Fig. 2.1. Dynamics of rapeseed production in the world*

*Calculated according to the USDA, June 2013 [2, p. 5]

Interesting fact is that the consumption of rapeseed in the world in recent years remains almost stable (Fig. 1.2).

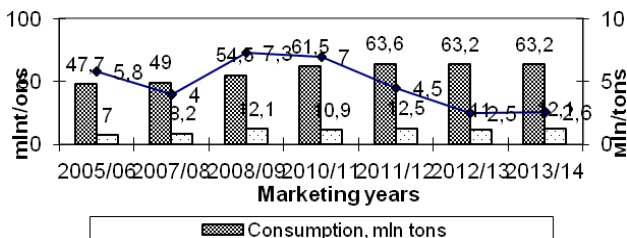


Fig. 1.2. The dynamics of rapeseed consumption in the world*

• Calculated according to the USDA, June 2013 [2, p.5].

Based on its overall production rapeseed belongs to the leading oil plants, giving priority only to soybean: from 471 million tons of oilseed soybeans account for 58% and rapeseed - 13%; data from the 2012/2013 marketing year - the overall production of oil rapeseed oil in the world, according to calculations.

Table 1.1
Main exporters of rapeseed in the world, ths. tons*

Country	Marketing year				Unit weight, %	2011/12 till 2008/09, %
	2008 /09	2009 /10	2010 /11	2011 /12		
Canada	7898	7169	7207	8725	68,7	110,5
Ukraine	2300	1421	1416	1250	9,8	54,3
EU-27	98	157	197	110	0,9	112,2
India	4	5	0	0	0,0	0,0
Other	4017	3479	2029	2614	20,6	
Total	12017	10810	10849	12699	100,0	105,7

* according to the data [1, p. 354].

As a result, in the whole world in 1997/98-2011/2012 marketing years the production of rapeseed increased by 83%, its world market supply - by 2 times, import - by 2.89 times, export - by 2.98 times. Due to the increase in domestic consumption of rapeseed by 1.83 times, its use for food needs rose by 55%, and its processing - by 84%. The volume of produced rapeseed oil increased by 108%, import - only by 1.9 times, the market supply - in proportion to the production, export - by 1.88 times, domestic consumption - by 106%, including the food needs - by 55%.

Ukraine, as can be seen from Table. 1.1, is one of the leading

exporters of rapeseed. Export is the main focus market for Ukrainian producers. The calculations of the experts show that it is more beneficial for Ukraine to export rapeseed than to process it into oil.

In January, large and medium-sized businesses in Ukraine produced 13.6 ths. tons of rapeseed oil compared to 7.2 ths. tons in December and 14.4 ths. tons in January 2015. Since the beginning of the season the production of rapeseed oil in large and medium-sized enterprises of Ukraine amounted to 139.1 ths. tons - 38% more than in the same period last season.

In the western, central and northern areas of the country the production of rapeseed oil in July-January 2015/16 year decreased by 2% compared to the same period of 2014/15 marketing year. In the current season, an increase in the production of rapeseed oil was recorded in the southern part of the country - in Odesa and Mykolaiv regions [4].

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