

РОЗВИТОК ПРОДУКТИВНИХ СИЛ І РЕГІОНАЛЬНА ЕКОНОМІКА

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FUNCTIONING OF THE LINSEED MARKET IN UKRAINE

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Formulation of the problem. Ukraine produces about 2% of flax in the world and is among the ten leading countries in the production of flax. Except our country, flax is produced in Canada, Russia, China, US, India, Argentina, Kazakhstan. Production of linseed in Ukraine tends to decrease, even despite the fact that there is an export demand for linseed in EU, USA, Canada, which makes about 40 thousand tons annually. In terms of production, oilseed flax ranks the fifth position behind sunflower, soybean, rapeseed, mustard. In recent years, the climate has dramatically changed towards warming. So, the production of flax becomes relevant, especially in the southern and eastern regions of Ukraine. Last year oilseed flax was grown in Dnipropetrovsk, Zaporizhzhya, Mykolayiv and Kherson regions [12].

Analysis of recent research and publications indicates insufficient coverage of the linseed market functioning, although in recent years the interest in this particular type of market has perked up considerably against the backdrop of the culture popularization as a supplementary source of income in agriculture. A number of research works are devoted to various aspects of linseed production and market functioning, for example: Chekhov A. [6] Safonov Y. [13] Nikolaenko S. [5], Pahaychuk N. [7], Maslak A. [4], Kruchinina A. [2], Makarenko V. [3], practical issues are covered in publications by Shkurko M. [15], Kostyushko I. [1], Slisarchuk M., Brahynets I. [14].

The purpose of the article is analysis of linseed production and consumption, the price situation in the national linseed market; identifying the main factors of influence on the further development of the flax market in Ukraine.

Results of the study. Today, an important and urgent problem for agricultural farms is optimizing the costs of growing crops, search for liquid culture with stable demand and high price in the market. So, flax is competitive in the range of other oilseeds.

Flax is drought resistant and can use moisture, inaccessible to other cultures. Observations show that after several days of drought flax can bloom again and give an extra yield. Among the crops that are grown in the arid conditions of the south of Ukraine, flax is the most drought resistant and precocious, it requires little costs. A short growing season greatly reduces the risks of natural shortfall in the harvest, and allows farmers to have proceeds from the flax sale in the middle of summer.

According to the recommendations of the leading flax seed manufacturers, each farm must have the flax acreage up to 20% in its structure, and its cultivation does not need a lot of money: it costs 1,3-1,5 times cheaper than sunflower. Profitability is up to 200% [7, P. 41-42; 1, p.18]. The overall growing technology can be provided with a set of machines and equipment for cereals. The average yield of flax is 8 cent/ha, but under compliance with the cultivation technology it can reach 18-20 cent/ha, the cost of 1 ha makes 2,0-2,5 thousand UAH. As it was estimated by Siayvo Ltd, even when its yield makes 7 cent/ha at a cost of purchases 3700 UAH/ton, flax is profitable [5, p. 23; 3, p. 28].

The structure of crop rotation in the steppe and forest steppe zones of Ukraine is overloaded by the popular nowadays sunflower and rapeseed. So, flax is a strong competitor. That's why placing flax in the conditions of Ukraine's climatic zones is concentrated in the steppe zone: from 86% of the total area in 2012 to 63% in 2014. However, it is worth noting, that the flax growing area was reduced by 25% (partly due to the annexation of the Crimea). There is a tendency to increase areas under flax in the forest-steppe zone (18.8%) in Polissya area, by 4.5% (Fig. 1).

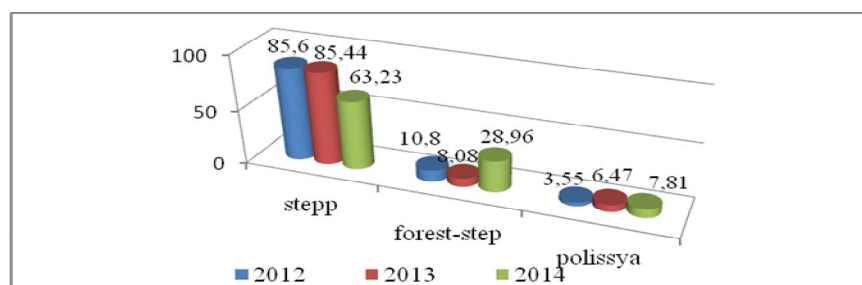


Fig. 1 Structure of flax in terms of climatic zones in 2012-2014, %

Flax production in Ukraine is characterized by a downward dynamics. During the period of 2012-2014, the amount of acreage decreased from 47.5 thousand hectares to 23.2 thousand hectares, or by 48.7%, due to the reduction of sown areas in the steppe zone from 40.7 thousand ha to 14.7 thousand ha, or by 36%. In the forest-steppe zone, the area of flax increased from 5.1 thousand ha in 2012 to 6.7 thousand ha in 2014, or by 30%, in the forest-steppe zone extension area increased from 1.7 thousand ha in 2012 to 1.8 thousand ha in 2014 (Table. 1).

Table. 1

Location and structure of flax sown areas in Ukraine in 2012-2014

Region	2012		2013		2014	
	ha	%	ha	%	ha	%
Crimea	16481.3	34.70	18673.5	40.62	-	-
Dnipropetrovsk	3244.8	6.83	1676.8	3.65	1533.63	6.62
Donetsk	556.6	1.18	394	0.86	664	2.87
Zaporizhyha	7288.7	15.3	5784.4	12.58	5492.77	23.71
Kirovograd	603.6	1.27	190	0.41	200	0.01
Lugansk			924.8	2.01		
Mykolaiv	3546.2	7.47	1322.6	2.88	1882.31	8.13
Odessa			4766.6	10.37	2858.38	12.34
Herson	8969.6	18.90	5543.4	12.06	2015.22	8.70
Step	40690.8	85.64	39276.1	85.44	14646.31	63.23
Vinnitsa	397	0.79	342.5	0.75	476.9	2.06
Kiev	8.9	0.02	11.2	0.02	388.3	1.68
Poltava						
Sumy	448	0.89	598.5	1.30	830	3.58
Ternopil	30	0.06				
Kharkiv	4256.1	8.45	2736.7	5.95	4927.1	21.27
Khmelnitsky						
Cherkassy			25.5	0.06	87.5	0.38
Chernivetsy						
Forest-step	5140	10.81	3714.4	8.08	6709.8	28.96
Volyn						
Zhytomyr	747.5	1.48	921.5	2.00	1191.01	5.14
Zakarpattya						
Ivano-Frankivsk	30	0.06	475	1.03	15	0.06
Lviv	47	0.09	42.3	0.09	603.1	2.60
Rivne						
Chernihiv	859.2	1.71	1537.5	3.34		
Polesie	1683.7	3.55	2976.3	6.47	1809.11	7.81
Ukraine	47514.5	100	45966.8	100	23165.22	100.00

* <http://www.4sg.com.ua/>

It should be noted that the Crimea was an exception to the general background of shrinking flax in the steppe zone, showing a positive trend.

The following positions in terms of growing of flax after the Crimea were occupied by: Zaporizhzhya region containing 5.5 thousand ha in 2014 to 7.3 thousand ha in 2012, Kharkiv region - 4.9 thousand ha in 2014 to 4.3 thousand ha in 2012, Odessa region - 2.8 thousand ha in 2014 to 4.8 thousand ha in 2013, Kherson region - 2 thousand ha in 2014 to 8.9 thousand ha in 2012. It should be noted that the downward dynamics was recorded in all the regions-leaders. The greatest rate of flax expansion was in Kyiv region: from 8.9 ha in 2012 to 388.3 ha in 2014, or by 44 times, and in Lviv region - from 47 ha in 2012 to 603.1 ha in 2014, or by 12 times.

In Ukraine, mainly small and medium agricultural firms are engaged in growing flax. Leading manufacturers in the national linseed market are companies located in the South of the country: PAL "Alpha Agro", "Agrarnik", "Rosiya JV" (Kherson region), SEC "Zelenoyarskoe", "Oasis" (Mykolayiv region). "Techno-project", "KFH Elana," "Drahmi" (Crimea), FG "Socrates" DPDH "Izvestia" (Zaporizhzhya region). FG "Anastasia", LLC "Agrofarmahim" (Dnipropetrovsk reg.).

Caused by the reduction of flax production areas, a downward trend in the linseed gross harvest was established in Ukraine: from 41.4 thousand tons in 2012 to 29.9 thousand tons in 2014, or 27.8%. The level of flax growth productivity in Ukraine does not exceed 9 c/ha, but the growth rate was 11.5%. In 2012 the average yield flax was 7.8 c/ha, whereas in 2014 it made 8.7 c/ha (Tab. 2).

Tab. 2

Dynamics of linseed performance in Ukraine in 2012-2014*

Index	2012	2013	2014	Changed,%
Gross, ths tons	41.4	25.4	29.9	72.2
Yield, c/ha	7.8	6.7	8.7	111.5

* According to the State Statistics Service of Ukraine

In the past year, there was increasing of gross yield by 18% compared to the index of 2013. Comparison of the average yield of 7.7 c/ha to the potential yield level of 20-22 c/ha, varieties declared by the researchers, points out to the significant potential of flax, which is not fully used. A particular example is the result of flax growing at Kherson firm "Alfa-Agro", where the yield of flax is 10 to 18 c/ha. Practitioners say that the technology of growing flax can ensure productivity of 20 c/ha [7, p 40-41].

The main field of flax consumption in Ukraine is exports. National consumption is low and it is represented by small food and pharmaceutical companies, in small quantities. The supply in flax market is formed by national production, because import of flax is practically absent. Exclusively seeds are imported.

Export has been the traditional field of using flax over the latest 10 years. Demand of the EU for our national flax is caused by its ecological purity. The biggest flax purchases are performed by the EU, as well as Egypt, Turkey, Russia, China. The main consumers are: Belgium (8 ths tons), Poland (4-5 ths tons), Lithuania (2-3 ths tons), Germany (2 ths tons). The deterrent for further exports increase is the export duty making 10%.

Ukraine annually exports 28-30 ths tons of flax seeds. In the overall structure of flax consumption the exports range from 78% in 2011 to 81% in 2013. During the period of 2011-2013, exports of flax increased from 28.6 ths tons in 2011 to 31.4 ths tons in 2013, almost by 10% (Fig. 2).

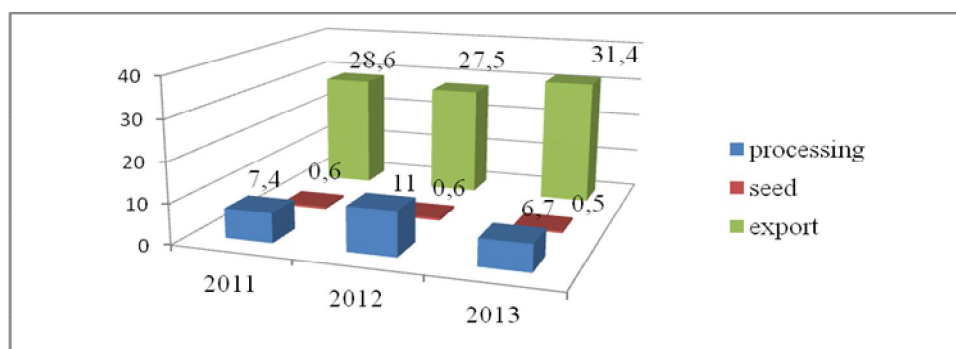


Fig. 2 Fields of flax consumption in Ukraine in 2011-2013, ths tons

As it can be seen, the growth rates of exports are rising, despite the presence of the 10% export duty. Flax produced in Russia and Kazakhstan is in high demand in the world market. Growing demand for flax led to creating a special area in Kazakhstan sowing linseed in the period since 2009 to 2013, from 58 thousand tons to 410.0 thousand tons or by 7 times, the gross harvest rose from 48 thousand tons to 295 thousand tons, or by 7 times.

The interest in the national linseed processing industry exists. On the national scale, the country processed up to 7-11 thousand tons of flax seeds for flax oil per year, or 17-20%. The volume of less than 1 thousand tons of flax is sent for seeds, or 1.5% of the total consumption (Fig. 2). Flax processing is not developed, rather lost, because in the history of Ukraine there used to be a successful flax processing period. So, at the end of 1980, in Ukraine there were 54 plants for processing flax [13, p 25]. Decline in this industry had a reverse effect on the performance of the culture. Now, the market of linseed processing is monopolized and includes a limited number of companies, such as PJSC "Nijinsky fat factory", LLC "Ahroselprom", LLC "System", LLC "AVA". etc.

In Ukraine there is no national demand for flax oil consumption in the diet for the reasons of taste preferences and traditions. Ukrainians do not pay proper attention to this oil in the diet, although linseed oil is the richest source of omega-3 fatty acids and contains five fatty acids: oleic, linoleic, linolenic, palmitic and stearic. Other products of linseed processing include: straw, chaff, meal. The low level of national consumption determines flax seed oil oriented export.

Consequently, significant changes in the flax consumption trends redistribution in the recent years has not occurred, except for a slight increase in the export volume due to high selling prices while reducing output. The both trends are characterized as stable consumption.

Linseed is characterized by high prices in the agricultural market. Pricing conditions are tending to increase over the latest 3 years (Fig. 3). The market price of flax oil during 2012 ranged between 3400 - 4550 UAH / t; in 2013 - 4100-5200 UAH / t; in 2014, the flax price tied a record: from 4300 to 7100 UAH / t, indicating the excess of demand over supply in the linseed market (Fig. 3).

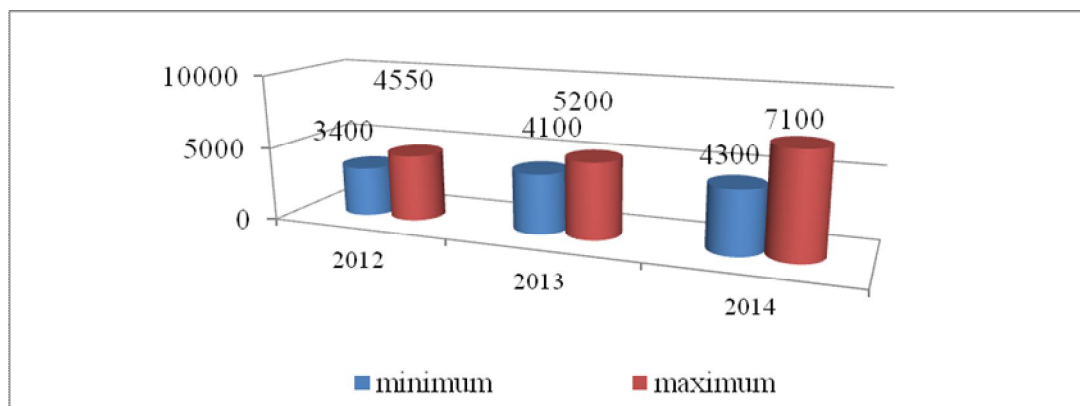


Fig. 3. Price positions (minimum and maximum) in the flax market of Ukraine in 2012-2014, UAH/t

It should be noted that the flax price positions in the agricultural market, compared to the price positions of sunflower, canola, soybean, are higher and therefore more profitable for farmers. Thus, according to the results of 2014, the demand price for sunflower in the agricultural market of Ukraine totaled 3100 UAH/t (min) and 6600 UAH/t (max); for rapeseed - 3500 UAH/t (min) and 5900 UAH/t (max); for soybeans - 4050 UAH/t (min) and 7000 UAH/t (max). Thus, last year, the minimum price of 1 ton of flax exceeded the price of sunflower by 1200 UAH/t, rapeseed - by 800 UAH/t, soybeans - by 250 UAH/t. The maximum cost of 1 ton of linseed was higher than the price of 1 ton of sunflower by 500 UAH/t, rapeseed - by 1200 UAH/t, soybeans - by 100 UAH/t. Consequently, flax is the leader in price positions in the oilseeds market. And it is also a significant motivation for putting it into crop rotation at agricultural enterprises.

The price for flax is determined by the following factors: importers' demand, refineries' demand, national consumption rates, supply by national manufacturers, supply by competitor countries (Russia, Kazakhstan), production cost and availability of customs restrictions at transactions in foreign markets.

Participants of the flax market are originators of reproductive seeds, manufacturers, exporters and processors of the commodity products, government. Each of these entities has its own mission, providing a phased chain "of new varieties: production of original seeds - production of commodity seeds - processing - sales of products in the global market." All market participants are interested in increasing market size, increasing its volume. Originator of reproductive flax seeds is interested in disseminating their own geographic varieties within the country and in establishing cooperation with manufacturing seed companies. Manufacturers of commercial flax products are seeking guaranteed sales of the final products at market prices. Exporters are interested in stable volumes increasing demand in the market and in concentration of large parties within certain territorial limits. Processors are dedicated to the production of raw oil that is in demand, and its sales. The state is interested in strengthening the capacity of agricultural production, strengthening the position of alternative crops and entering international markets.

The results of the study allow summarizing the main factors influencing the development of flax market in Ukraine, which we identified as factors of the market size reduction and factors of the market size increase. Factors reducing the flax market size include: low yield of crops, high seeding rate, insufficient popularity of the culture, low level of raw materials processing, shortage of quality high reproduction seed, non-observing the agricultural cultivation practices, low demand from processing industry, export duty.

Factors increasing the market size are: adaptability of flax to growing in all regions of Ukraine, drought resistance, short growing period (80-105 days), resistance to adverse weather and climatic conditions, easy growing technology, unpretentiousness to soil fertility, liquidity of commodity products, growing exporters' demand, high price in the agricultural market, elimination of export duties on flax.

We have also generalized subjective reasons, which stand in the way of flax sowers expansion among the participants of this market: agrarian enterprises of small and medium level indicating non-guaranteed sales, low liquidity, lack of experience or a bad "first" experience of flax growing, reluctance to risks, large seeding rate (40-45 c/ha), low yields.

Large enterprises and agricultural holdings demonstrate their displeasure with the volume of demand in high reproduction seeds, high prices of elite seeds, low yield. Recently, demand for seeds is recorded by the foreign companies. This indicates a shortage of high-quality material in the seed breeding market of Ukraine.

Exporting companies demonstrate the following problems: high purchase prices, export duty existence, absence of large commodity seeds quantities, increased logistics costs compared to those of other oil crops, insufficient product quality, fluctuations of supply (unstable balance); lack of infrastructure, storage products system and requirements to it.

Processors, showing some interest in flax, are focused on major crops and distinguish the following factors: small pitches supply, short term storage of oil (quickly lost quality), low demand for linseed oil, lack of sales trends.

Originator of flax seed defines major obstacle to be the availability of counterfeit and imitations of seed production, lack of clear production planning for 2-5 years.

Issues of further flax market development lies in the plane of consideration and balance of the market participants' interests in its development, which is the direct task of the state as a regulator. Since 1999, law provides regulation of deliveries sunflower, flax and saffron milk cap from Ukraine to protect interests of the national processing industry in the form of export duties, which have gradually decreased from 16% to the current level of 10%. At the same time, the highest growth in exports of oilseeds is recorded for rapeseed, soya, sunflower oil, i.e. goods not covered by export duties.

This situation indicates a lack of systematic regulation of the oilseed market. The opposite processes are taking place: the suggested draft Law of Ukraine "On Amendments to the Law of Ukraine": "On rates of export duties on certain types of oil seed crops "for the abolition of export duties on flax seed crushed or not crushed, and false flax" (Reg. № 2992 of 14.05.2013), which was initiated by the market players, presumed repeal of export duty on flax, was returned for revision and has not been yet adopted by the Verkhovna Rada of Ukraine.

Liberalization in the agricultural market segment that shows no growth, is essential for the future and can be the basis for strengthening the position of national enterprises in the agricultural sector of the national market and strengthening the export potential of the agricultural sector.

Conclusions and prospects for further research. Studies of major trends in the linseed market of Ukraine allowed to determine that it is characterized by negative dynamics, linseed has not gained enough popularity among farmers, and the largest area of linseed cultivation in the Crimea is lost for Ukraine.

Prospects for further research of the linseed market are significant, as the climate conditions are changing towards warming, thus giving linseed growing a separate niche in the agricultural market of Ukraine, especially in southern and eastern regions of Ukraine, where linseed can act as an alternative to sunflower.

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Chekhov S.A., PhD, Head of Experimental Station of Rare and Aromatic Crops, NAAS. **Functioning of the linseed market in Ukraine.** The analysis of flax production and consumption in the national agricultural market has been made for climatic zones, regions of Ukraine. Dynamics of the price situation, the basic factors of influence on the further development of the flax market in Ukraine have been analyzed.

Key words: linseed market, flax production, linseed consumption trends, linseed price positions.

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Чехов Сергій Анатолійович, кандидат економічних наук, кандидат економічних наук, Директор Дослідної станції ефіроолійних та малопоширених сільськогосподарських культур НААН. **Функціонування ринку льону олійного в Україні.** Представлено аналіз показників виробництва та споживання льону олійного на вітчизняному аграрному ринку за природно-кліматичними зонами, областями України, динаміка цінової кон'юнктури, визначено основні фактори впливу на подальший розвиток ринку льону олійного в Україні.

Ключові слова: ринок льону олійного, виробництво льону олійного, напрямки споживання льону олійного, цінові позиції льону олійного.

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Чехов Сергей Анатольевич, кандидат экономических наук, Директор опытной станции эфиромасличных и малораспространенных сельскохозяйственных культур НААН. **Функционирование рынка льна масличного в Украине.** Представлен анализ показателей производства и потребления льна масличного на отечественном аграрном рынке по природно-климатическим зонам, областями Украины, динамика ценовой конъюнктуры, определены основные факторы влияния на дальнейшее развитие рынка льна масличного в Украине.

Ключевые слова: рынок льна масличного, производство льна масличного, направления потребления льна масличного, ценовые позиции льна масличного.