

## **STATE AND PROSPECTS OF MILK PROCESSING BRANCH IN LVIV REGION OF UKRAINE<sup>1</sup>**

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**Abstract.** The results of milk processing branch in Lviv region of Ukraine under conditions of market and competitiveness are presented. The role of region's milk processing branch as well as the milk processing enterprises quantity dynamic and milk and dairy products production and consumption dynamic in region and its factors are shown. The regional products and producers milk and dairy products market structure as well as exporting-importing and innovative activity in milk processing branch are analyzed. The structure of milk processing enterprises raw materials base and possible perspective of regional milk processing branch are given.

**Key words:** milk, processing, production, consumption, market, Lviv region of Ukraine

### **INTRODUCTION**

Milk is a unique product which has not been yet in the word synthesized in the production process. None other food product can compete with it by the composition [Savytska 1999]. Man gets 40% of energy and protein supply from milk and dairy products [Dobrianskyi, Talko and Ivanov 2004]. American scientist K. Ekls wrote: "Milk can transform any product, but there is no such a product which is able to transform milk" [Kolot and Korovnikov 2004].

Taking into account the fact that dairy products are among the principal ones as food and additional component in production of different food products, dairy industry is traditionally considered one of the leading in the structure of food industry of Ukraine. Under modern conditions of market and competition relations, development of the branch has got many peculiarities and problems. To achieve the aim of the research it was necessary

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to study dynamics formation of milk processing branch in the region within the frame of general state tendencies, revealing of regional peculiarities of the process as well as its resource and investment supply, peculiarities of formation of raw materials base in the given region. Dynamics of export and import transactions of products in milk processing branch and level of innovation and efficiency of the branch have been analyzed in the region.

Great importance of milk processing development, its intensive supply for increase of population's well-being make research of different aspects of the problem a significant and vital one. That's why it attracts attention of many researches in different countries. Thus, according to Baran [2013], integration with the European Union and ongoing liberalization of international trade has been gradually leading to globalization of the dairy market and expansion of the competition area. Speaking about the role of investments in the development of the branch and raw materials base Wysokiński, Dziwulski and Jarzębowski mentioned that investment activity of milk farms depends on the scale of production. Quality of the product is also of great importance. In accordance with Kowalska [2011], fine quality of food products and the process of production are the main requirements of the customers. Nowadays improvement of innovation base is one of the principle factors of the branch development: "Innovations positively affect company's activities in many ways... Innovations contributed to an increase in sales and share of current business activity or they enabled entry into new market segments or they contributed to an increased flexibility of production processes..." [Zalewski and Goralski 2011]. According to Cieslewicz [2008], the development of innovative activities is considered as a basic factor of the improvement in competitiveness of food industry.

Analysis of data of the presented sources grounds a hypothesis that enterprises of milk processing branch in Lviv region will continue their further development, first of all by means of their domestic competitive capacity and extension of products assortment, basing on increase of its innovative level and because of increasing attraction of foreign investment into equipment and technology.

## **MATERIAL AND METHODS**

Principal methods having been used in the research are monographic (used in study and characterizing of separate milk processing enterprises), economic and statistical (for calculation of indicators of development dynamics of certain phenomena and processes and influence of the corresponding factors on them), peer review and scientific forecast (for forecasting the possible prospects of the branch development). Graphic method is used for better presentation of the received results of the research. Data of statistic directories, yearbooks as well as materials of the very milk processing enterprises of the region were used for the investigation. Research has been made basing on the statistics from milk processing enterprises in Ukraine paying specific attention to Lviv region as one traditionally specifying in milk production because of favorable conditions for the development of the industry. According to Zhelezniak [2007], Lviv region stands out of other administrative regions for "highly favorable conditions for further development of milk processing enterprises and is situated in the area of high competitive potential".

Resulting from the fact that time saving is a criterion of production efficiency, achievement of the highest results at the lowest expenditure of public labor [Kantsevych 2010], determination of production efficiency can be calculated using formula of calculation of functional efficiency ( $E_f$ ) of production proposed by Priadko [2003] and which is developed and fulfilled in ternary system coefficient of production:

$$E_f \left\{ \begin{array}{l} = \frac{Q}{Z \times L} \\ = \frac{Q}{m_c} \\ = \frac{Q}{a \times F} \end{array} \right.$$

where:  $Q$  – total amount of production;  
 $Z$  – salary of one worker;  
 $L$  – number of workers at production sector;  
 $a$  – specific coefficient of depreciation loss;  
 $F$  – average cost of basic production assets per year;  
 $R$  – amount of other expenses;  
 $m_c$  – material costs.

He also proposes to calculate coefficient of integral efficiency ( $E_i$ ) basing on functional efficiency:

$$E_i = \frac{Q}{Z \times L + m_c + a \times F + R}$$

To investigate impact of separate factors on the efficiency of milk processing enterprises of Lviv region we use linear multiple regression. Regression model describes real existing phenomena of correlation relations. According to their characteristics, correlation relations are quite complex and different ones. Taking into account great number of the factors, it is impossible to determine and follow all of the relations. Practically, linear models are mostly used. Such approach has a hint of convention, because it has similar character of relations with all factors. But application of too complex functions causes increase of parameters number and thus, decreases calculation accuracy and complicates results interpretation.

To make the calculation more convenient and simple all variable models (dependent and independent) are used in logarithms. Consequently, it allows minimization of mistake at calculation, because of great number of factor variables. It does not mean change of economic methods of investigation to mathematic ones, but improvement of mathematic apparatus and extension of mathematic base of economic methods [Vantukh 2006].

## RESULTS

During the Soviet period formation of Ukrainian milk processing branch by means of initial accumulation of current assets required for its further development improved branch structure of food industry. Most of milk processing enterprises had established their production capacity till 90s of the 20<sup>th</sup> century. Focus on the great raw materials base, consumption demand provided by plan indicators and good income of population, potential markets in Soviet republics were the peculiarities of the process. After Ukraine had got its independence, existing production and branch relations were broken. That's why production capacity of milk processing enterprises at the end of 80s – beginning of 90s was not fully used. Considering outdated technologies and non-effective macroeconomic state policy, private capital bypassed dairy industry, resulting in terrible condition of its enterprises which got even worse during the period of reforms of property in agrarian sector.

Vital stage of crucial technological changes in the development of milk processing enterprises started after 1996 when joint-stock companies (JSK) had been established on the base of the existing enterprises. Choice of such a kind of property caused increase interest of workers in milk processing enterprises et the results of their job.

In the period of transformation processes land and property of Lviv region was greatly divided into shares preventing effective development of AIC enterprises, including ones of dairy industry. But border location, many health resorts, recreational and natural resources, tourism potential of the region, increase of population income, made positive impact on functioning of milk processing enterprises. The factors favored broadening of milk and dairy products demand and also caused raise of market competition. As a result, number of milk processing enterprises in Lviv region decreased from 38 in 2000 to 17 in 2011, but total amount of their products sale increased almost 8 times in the same period.

In 2012 only 10 milk processing enterprises carried their activity in Lviv region. In January-February 2012 they bought 103.5 thousand tons of milk that is by 4.6% more in comparison to corresponding period of the previous year.

Lately dairy products market in Ukraine developed in the direction of its broadening. Similar tendencies were also specific for Lviv region where one could see direct dependence between decrease of number of enterprises and increase of production value and, correspondently, sale of dairy products (Fig. 1).

The biggest part of regional market of dairy products (almost 43%) was occupied by enterprises producing large assortment of dairy products of high quality and sell it at high price (JSC “Lviv city milk plant”, Closed company “Halychyna”, Affiliate of JSK “Prometei”, “Lviv milk factory”). The mentioned enterprises are principal competitors at local market but company “Halychyna” is a leader among them. Its share at the market of dairy products makes 36.7% and continue to raise. Nowadays the company “Halychyna” is one of the leading supplier of dairy products not only in Lviv region but also other Western regions of Ukraine as well as one of the principal producers of dairy products in Ukraine because of large assortment (casein, dry defatted milk, butter, cheese, milk, kefir, sour cream, yogurt) and new products (buttermilk, desserts, four kinds of energy drinks “12 vitamins”, fruit yogurts, including ones of children).

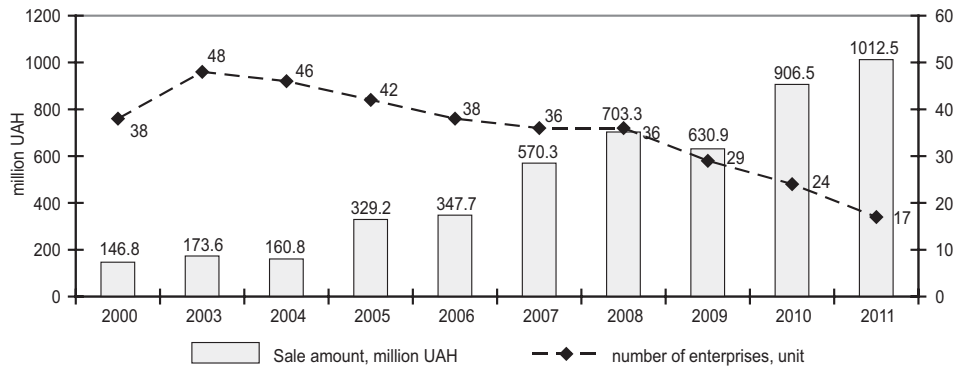


Fig. 1. Dynamics of number of milk processing enterprises in Lviv region and amount of dairy products sold by them

Source: Office of Statistics in Lviv region.

Nearly 17% of the market is occupied by smaller local enterprises, which produce both milk products and cheese of not high quality and sell it at moderate price. They are JSC “Komarno cheese plant”, JSC “Zhydachiv cheese plant”, JSC “Rava-Ruska butter plant”, JSC “Milk plant of Sambir”. Milk processing enterprises specifying in cheese production, e.g. JSC “Busk milk plant”, locally is close to milk processing enterprises. Their principal product is milk and cheese and they occupy nearly 1% of the market. Milk processing enterprises specializing in dry dairy products occupy nearly 3% of the market. Special attention should be paid to activity of JSC “Brody plant of dry defatted milk” occupying 2.3% of dairy product market in Lviv region (Table 1).

Rate of growth of dairy products sale indexes in the region does not have distinct tendencies, but fluctuates from increase to decrease. Deposit of milk processing enterprises into the development of food industry of Lviv region also is not clear one – during the investigated period it fluctuated between 11–15% (Table 2).

During the last years one could witness a tendency of sufficient increase of production amount of milk and dairy products both in the whole country and in Lviv region. In particular, amount of dairy products has considerably increased, i.e. kefir and yogurts, but growth of sour cream and milk production is not so great one (Table 3).

In contrast to the described situation production of cream butter has decreased because of appearance of substitutes of plant oils at domestic market. Similar tendency characterizes cheese products and can be explained by increase of level of self-provision of population with products of animal origin because of transfer of greater share of milk production in the sector of individual farms.

Production of dairy products – is the very economic activity that dynamically develops and is opened for assortment broadening and development of innovative dairy products providing main increase at the market. Diversification level and financial capacity of dairy industry enterprises, their partnership relations and some other factors should provide functional integrity. Positive rate of dairy industry increase does not correspond to comparatively low rate of population solvency causing sale problems and decrease of demand on dairy products and its change in separate segments of the market – consumer,

Table 1. Milk processing enterprises of dairy industry in Lviv region in 2011

Enterprises	Products
JSC "Milk plant of Sambir"	butter; cheese; whole milk products
JSC "Lviv city milk plant"	whole milk products; defatted products; butter; cheese; casein
JSC "Brody plant of dry defatted milk"	dry defatted milk; animal butter; milk 2.5%; sour cream 20%; cheese 95%, defatted cheese; kefir; ice cream; defatted products
JSC "Drohobych milk plant"	whole milk products; animal butter; fat cheese
JSC "Rava-Ruska butter plant"	whole milk; butter; cheese
Joint Ukrainian-German enterprise "Skomek"	liquid processed milk; cream butter fat up to 85%; dairy products; casein and caseinates
JSC "Komarno cheese plant"	cheese in assortment; butter
Private closed company "Halychyna"	liquid processed milk; dry milk and cream; cream butter fat up to 85%; dairy products; spreads and fat mixtures
Affiliate of JSK "Prometei", "Lviv milk factory"	products of whole milk, defatted
Turka cheese plant	whole milk; butter
JSC "Yavoriv milk plant"	whole milk; animal butter
JSC "Mykolaiv milk plant"	whole milk; animal butter
JSC "Busk milk plant"	whole milk; cheese; animal butter
JSC "Zoloviv cheese plant"	production of dairy products
JSC "Horodok milk plant"	whole milk; butter; cheese
Join Venture (Ukrainian-German) "Svitanok"	dairy products
JSC "Zhydachiv cheese plant"	animal butter; dairy products; cheese

Source: Department of Statistics in Lviv region.

Table 2. Sale amount and indexes of industrial products at the enterprises of dairy products and ice cream in 2005–2011

Indicator	Year						
	2005	2006	2007	2008	2009	2010	2011
Amount of sold dairy products (million UAH)	329.2	374.7	570.3	703.3	630.9	906.5	1 012.5
Share of milk processing enterprises in food industry (%)	13.2	13.6	15.5	14.2	11.1	13.3	11.2
Indexes of dairy products sale	112.5	131.8	152.2	123.3	89.7	143.7	111.7

Source: Department of Statistics in Lviv region.

in most cases, is focused at cheaper products. It causes structural changes of supply at the market of milk and dairy products, i.e. decrease of amount of cheese production and practically does not change amount of butter production, at the same time increasing production of whole milk – liquid processed milk and dairy products (Table 4).

Level of satisfaction of population needs of dairy products is still very low in Lviv region (Table 5).

Table 3. Production of dairy products according to types of milk processing enterprises of Lviv region (ton)

Kind of product	Year											Rate of changes
	1990	1995	2000	2005	2006	2007	2008	2009	2010	2011	2011	
Liquid processed milk	...	...	...	26 268	34 138	31 744	31 226	27 703	21 427	30 771	117.1	
Cream fat more than 8%	1 700	300	0	788	634	554	226	98	63	...	-	
Dry milk and cream	...	...	...	2 716	2 800	3 625	1 829	...	2 345	1 994	73.4	
Cream butter fat up to 85%	...	...	...	5 555	5 085	2 301	2 340	2 477	3 158	2 422	43.6	
including sweet cream butter	...	...	...	5 543	5 085	2 301	2 340	2 477	3 158	2 422	43.7	
Fat cheese	5 000	1 400	1 200	3 926	2 854	2 442	1 221	832	589	365	9.3	
including												
cheese	...	1 000	1 000	3 648	2 558	2 133	974	707	...	...	-	
brine cheese	...	...	...	269	281	301	247	...	...	...	-	
Fresh cheese non-fermented and cottage cheese	...	...	...	1 818	2 080	2 580	2 628	1 561	896	550	30.3	
including												
sour cheese defatted	...	...	...	75	...	...	295	310	...	...	-	
sour cheese fat	6 900	1 000	500	701	933	1 297	1 399	730	733	407	58.1	
Dairy products	13 600	3 700	2 400	24 952	36 694	50 318	62 833	55 120	54 839	51 761	207.4	
including												
kefir non-flavored, without fruits, nuts, cocoa and other fillings	...	...	...	8 147	12 909	17 319	23 519	24 017	22 627	22 336	274.2	
Sour cream non-flavored, without fruits, nuts, cocoa and other fillings	34 100	57 00	2 800	11 505	14 071	17 107	19 563	17 759	17 400	13 742	119.4	
Yogurt flavored or with fruits, nuts, cocoa or other fillings	...	...	...	4 407	8 556	13 274	15 347	11 634	11 495	13 435	304.8	
Butter, drink of buttermilk	...	...	...	292	91	...	...	...	...	...	-	
Ice cream and food ice	...	...	...	6 769	8 171	9 239	...	...	...	...	-	
including												
ice cream of cream	10 100	3 800	6 200	1 299	1 302	...	...	...	...	...	-	
sundae	...	...	...	4 569	5 262	5 404	...	...	...	...	-	
spreads and fat mixtures	...	...	...	26	161	8 660	6 564	3 317	3 617	...	-	
casein	...	...	...	400	226	259	205	...	41	...	-	

Source: Department of Statistics in Lviv region.

Table 4. Production of main groups of dairy products per person in Lviv region in 2003–2011 (kg)

Kind of product	Year											Deviation (+/-)
	2003	2004	2005	2006	2007	2008	2009	2010	2011			
Liquid processed milk	5.5	7.5	10.2	13.3	12.4	12.2	10.9	8.5	12.2	6.7		
Cream butter	0.7	1.6	2.2	2.0	0.9	0.9	1.0	1.3	0.9	0.2		
Fresh cheese non-fermented and cottage cheese	0.4	0.6	0.7	0.8	1.0	1.0	0.6	0.4	0.2	-0.2		
Fat cheese	1.0	1.4	1.5	1.1	1.0	0.5	0.3	0.2	0.1	-0.9		
Dairy products	4.6	6.5	9.7	14.3	19.6	24.6	21.8	21.7	20.5	15.9		

Source: Department of Statistics in Lviv region.

Table 5. Dynamics of production and consumption of milk and dairy products per person in Lviv region in 1990–2011

Indicator	Period																			Rate of changes
	1990–1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011			
Production of milk and dairy products per person (kg)	352.90	341.10	359.60	372.30	376.60	380.80	389.60	405.50	384.00	369.80	360.2	346.80	317.20	286.10	254.20	248.10	261.40	74.1		
Consumption of milk and dairy products per person (kg)	300.40	262.80	255.20	216.00	273.00	274.10	261.80	278.80	268.80	265.3	258.30	265.00	250.50	233.90	218.20	210.50	207.60	69.1		
Production per person (%)	85.10	77.00	70.90	58.00	72.50	71.90	67.20	68.70	70.00	71.7	71.70	76.40	78.90	81.70	85.80	84.80	79.40	93.3		
Rational norm of consumption – 380 kg (%)	79.05	69.16	67.16	56.84	71.84	72.13	68.89	73.37	70.74	69.82	67.97	69.74	65.92	61.55	57.42	55.39	54.63	69.1		

Source: Department of Statistics in Lviv region.



Considering the integration of milk processing enterprises and milk processing complex in general, it is advisable to make calculation of indicator of integral efficiency of milk processing enterprises of Lviv region and its dependence on corresponding factors [Priadko 2003] – Table 6.

Table 6. Dependence of integral efficiency of milk processing enterprises of Lviv region on its separate factors in 2005–2011

Year	Integral efficiency Efficient variable $y$	Level of raw milk venality Factor variable $x_1$	Index of supply change Factor variable $x_2$	Grants from accumulated fund of VAT. Factor variable $x_3$	Index of demand change Factor variable $x_4$	Cow productivity Factor variable $x_5$
2005	108.0	51.1	94.4	1 037.8	97.4	3 587.0
2006	85.0	44.8	96.3	974.9	102.6	3 821.0
2007	121.0	60.0	91.5	1 607.0	94.5	3 816.0
2008	138.0	61.2	90.2	1 750.6	93.4	3 837.0
2009	93.0	61.1	88.8	1 668.9	93.3	3 873.0
2010	93.0	42.6	97.6	2 780.4	96.5	3 861.0
2011	85.0	41.4	105.4	3 200.0	98.6	3 927.0

Source: Author's own work.

Coefficients receive in the carried calculations determine the elasticity of integral efficiency to a certain factor. Econometric model of the dependency get the following form:

$$y = -3,733.51 + 26.90x_1 - 38.12x_2 + 0.44x_3 + 103.01x_4 - 1.23x_5$$

According to the given production function one can make the following conclusions:

- growth of the level of raw milk venality per one standard unit increases indicator of integral efficiency by 26.90 standard unit, because it will favor stow capacities of milk processing enterprises;
- change of supply index per one standard unit decreases indicator of integral efficiency by 38.12 standard unit, because its fluctuation during the investigated period has moved to the decrease, moreover, the given coefficient reflexes market reaction to surplus of dairy products; limitation of storing period is the only negative point;
- increase of grants from accumulated fund of VAT per one standard unit rises indicator of integral efficiency by 0.44 standard unit; the miserable impact proves the necessity of scientific disputes on usefulness of granting of certain kinds of agricultural products or finding any alternatives;

- growth of demand for dairy products per one standard unit increases indicator of integral efficiency by 103.01 standard unit. Thus, we make conclusion that increase on solvent demand is the principal force, which is able to move milk processing branch forward. Special attention should be paid to social problem of society development, favoring family formation, birth. Because the very young families make the base of demand for dairy products;
- growth of cow productivity per one standard unit decreases the integral efficiency by 1.23.

But increase of indicators of the all mentioned factors in total per one standard unit will cause fall of indicator of integral efficiency by 3,733.51 without considering other factors of impact.

Efficiency of milk processing enterprises activity depends not only on production of qualitative and modern dairy products, but also on ability to sell it. That's why now milk processing enterprises actively work in the direction of development and practical fulfillment of marketing strategies and price being its important element.

Estimation of the share of milk processing enterprises of Lviv region in production of domestic dairy products fluctuated during the investigated period in frame of 1–11%, depending on kind of product and determined their contribution to satisfaction of solvent demand at domestic market (Table 7).

Table 7. Share of Lviv region in production of certain kinds of dairy products in Ukraine in 2005–2011 (%)

Kind of product	Year							Deviation (+/-)
	2005	2006	2007	2008	2009	2010	2011	
Liquid processed milk	3.0	4.2	3.7	3.9	3.6	2.7	3.5	0.5
Fresh cheese non-fermented and cottage cheese	2.2	2.2	2.8	2.9	1.8	1.1	0.7	-1.5
Dairy products	5.0	7.0	9.5	11.8	11.2	11.4	10.9	5.9

Source: Department of Statistics in Lviv region.

Modern level of foreign investments into dairy industry correspond neither international investment abilities nor increasing needs of the branch because of too high risks, most of which are political ones. Thus, milk processing enterprises of Lviv region largely direct attracted capital at development of innovative kinds of dairy production while number of new introduced European technological processes of milk processing deepening is still small one. The only producer of dairy products having made such modernization is closed company “Halychyna”. Technological equipment of the company is foreign one and bought in Poland, Holland and Switzerland.

The enterprise has doubled its production capacity as a result of the renovation and broadening of fixed assets. Before the reconstruction production capacity of the closed company “Halychyna”, which is located at Radekhiv milk plant, allowed processing

of 300 tons of milk a day, but after reconstruction it increased up to 400 tons. Nowadays Radekhiv milk plant is able to produce nearly 200 tons of dairy products a day (Table 8).

Table 8. Introduction of technological processes and development of new kinds of products at enterprises producing dairy products and ice cream (units)

Kind of action	Year						
	2005	2006	2007	2008	2009	2010	2011
Introduction of new technological processes	–	–	2	–	–	–	–
among them of small wastes	–	–	2	–	–	–	–
Developed production of innovative kinds of products	–	–	12	4	5	5	8
Bought new technologies	–	–	–	–	–	–	–

Source: Department of Statistics in Lviv region.

Crucial technological reconstruction of equipment by plants-leaders of dairy industry happened in 1997–2000. Thus, we can affirm that after crisis of 1998 milk processing industry started a period of renovation and growth of production because of intensification of production processes. But the process happened at very low rate because of inaccessibility of new fixed assets caused by decrease of amount of attracted investment into fixed capital of the branch and strengthening of competition at local market of dairy products.

Existing level of technical supply of milk processing enterprises is adequate for production growth, while increase of the level of existing production capacity use is inadvisable because they considerably cover present potential of agriculture as to supply of raw milk. Such situation at raw material market results from irrational policy of processing enterprises of agro industrial complex during the period of property reformation. Being in power they deliberately lowered purchasing prices. As a result farmers considerably decreased amount of the agricultural products production and consequently it caused cut-back of animal products at processing enterprises of AIC resulting in decrease of use of production capacity of the enterprises.

Taking into account the fact that effective development of milk processing industry depends on the state of milk animal breeding and after study of the indicators of the latest efficiency, one can understand the reason of inadequate level of use of production capacity of milk processing enterprises and strengthening of competition between them for raw material base. Raw materials i.e. its lack and low quality are the reason of both problems because during the researched period amount of raw milk production cut down by 30% in general and at separate categories of farms. The same situation concerns number of cow heads and their milk yield, i.e. number of herd of milking cows cut down by 30–35% whereas their yield averagely increased by 10–20%.

Making characteristics of existing redistribution according to amount of raw milk supply between different categories of farms, one can determine that peasants' farms were principal suppliers of milk processing enterprises during the investigated period. But dynamics of the share of small-scale sector proved decrease of amount of milk supplied by population farms by 21% in 2011 comparing to indicators of 2005, making 64% in general. In contrast, agricultural enterprises and other farming structures such as provision organizations and other intermediaries took back their position at the market. Such tendency could be explained by changes in the structure of rural population, where number of young people shortened every year, but number of older people increased. Thus, nowadays average age of rural population carrying private farming activity makes 55–62 years.

Imbalance between rates of increase of salary and price on milk and dairy products, taking important part in population meal ration, caused decrease of its share in consumption structure from 300.4 kg in 1990–1995 to 207.6 in 2011 making 54.63% of rational norm of consumption.

Filling of domestic market by domestic producers and small amount of import made positive influence on amount of milk and dairy products export. But prevalence of dairy products export over its import causes dependence of domestic milk processing enterprises on conjuncture of world market.

Analysis of the amount of foreign trade by separate milk products showed sufficient growth of cheese import and fall of its export. Besides, milk processing enterprises of Lviv region stopped export of cream butter and shortened export of milk and dairy products in 2011 comparing to 2005. In general export prevailed import of mentioned categories in 2011 (Table 9).

Table 9. Amount of foreign trade by certain kinds of dairy products in Lviv region in 2005–2011

Kind of product	Year							Rate of changes
	2005	2006	2007	2008	2009	2010	2011	
Import of certain kinds of dairy products (ton)								
Milk and dairy products	234.7	1 343.4	102.3	672.4	8.8	241.3	78.4	33.4
Cheese	3.5	10.1	0.5	47.0	35.5	91.3	137.9	394.0
Export of certain kinds of dairy products (ton)								
Milk and dairy products	404.0	272.0	223.0	65.5	28.0	32.0	352.0	87.1
Cream butter	120.0	58.8	23.7	47.5	0.5	–	–	–
Cheese	156.0	9.2	6.0	47.9	8.5	8.2	5.2	3.3

Source: Department of Statistics in Lviv region.

But attention should be paid to the fact that rate of its changes has been greatly slowed down proving certain difficulties in the development of milk processing enterprises of Lviv region. Problems of the enterprises of dairy industry are largely connected with underutilization of production capacity and worse qualitative parameters of dairy products in comparison to its foreign analogues.

## CONCLUSIONS

During the investigated period structure of milk production in Ukraine and in Lviv region in particular, dynamically changed in the direction of increase of share of individual farms till 2007, afterwards one could witness tendency to revival the position of agricultural enterprises. Such situation gradually made positive impact on state of milk processing enterprises supplying them with raw materials. But even nowadays in Lviv region more than 90% of milk is produced on private farms, but large milk processing enterprises, mostly in the form of joint-stock companies spent large cost for raw materials transportation from far (even more than 500 km) territories, where milk is mostly produced by large agricultural enterprises and is better quality.

Milk market in Lviv region is formed under the influence of specific peculiarities of the region, main of them is border location, deep historical traditions of dairy industry, presence of great number of spa resorts, natural and recreation resources, great tourism potential. The factors have resulted in strengthening of competition and gradual decrease of the number of milk processing enterprises while their production increases at high rate.

During the last 20 years the highest rate of production characterizes such dairy products as kefir and yogurts, but rate of production increase of sour cream and milk is slower one. Production of cream butter and cheese products has double decreased. It is connected with the appearance of surrogates of vegetable oils at the market because the largest part of milk raw material production is concentrated at individual private farms.

Level of consumer satisfaction with dairy products in Lviv region is still very low one – from 80% in average in 1990–1995 it has decreased to 55% in 2011. In the region balance of foreign trade by dairy products of domestic production in general is positive one, but of certain kinds of products (such as cheese) as a result of negative tendencies in its production.

Milk processing enterprises of Lviv region suffer from the main problems such a lack of qualitative milk raw materials, deficiency of investment and thus, slow rate of production innovation and low tempo of its increase. The consequences of the problems reveal in lower quality of products in comparison to foreign analogues.

Existing tendencies allow making forecast that in the nearest future share of dairy products produced by Lviv milk processing enterprises will increase by 15% at Ukrainian market. Share of liquid processed milk will stay on 3%; fresh and cottage cheese will continue to decrease because of strong competition. In the nearest future one will witness concentration of production of certain kinds of dairy products particularly in Lviv region.

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## STAN I PERSPEKTYWY BRANŻY PRZETWÓRSTWA MLEKA W REGIONIE LWOWSKIM UKRAINY

**Streszczenie.** W artykule przedstawiono rezultaty badań nad stanem mleczarstwa w regionie lwowskim na Ukrainie w warunkach gospodarki rynkowo-konkurencyjnej. Pokazano zarówno rolę mleczarstwa w regionie, jak i dynamikę zmian ilościowych w liczbie przedsiębiorstw mleczarskich, a także dynamikę kształtowania się wielkości produkcji i konsumpcji mleka i wyrobów mlecznych w regionie oraz czynniki kształtujące zmiany. Analizowano regionalną produktową i producencką strukturę rynku mleka i wyrobów mlecznych według produkcji i producentów, a także działalność eksportowo-importową i innowacyjną w branży mleczarstwa. Podano strukturę bazy surowcowej przedsiębiorstw mleczarskich i możliwe perspektywy mleczarstwa regionu.

**Słowa kluczowe:** mleko, przetwórstwo, przedsiębiorstwo, produkcja, konsumpcja, rynek, region lwowski Ukrainy

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