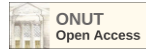




UDC [636.32/.38:636.03]:338.439.6(477.74)

DOI <https://doi.org/10.15673/gpmf.v22i4.2535>

**T. Turpurova, PhD. Sc., Associate Professor, E-mail: turpurova.tatyana@gmail.com,**  
ORCID: <https://orcid.org/0000-0003-3030-7591>, Researcher ID: C-3755-2017

**N. Vorona, PhD. Sc., Associate Professor, E-mail: tarnin@te.net.ua,**  
ORCID: <https://orcid.org/0000-0001-6903-9016>, Researcher ID: F-8020-2016, Scopus ID: 57188205800  
*Department of Grain and Feed Technology*  
*Odesa National University of Technology, 112, Kanatna Str., 65039, Odesa, Ukraine*

## FOOD SECURITY OF THE ODESSA REGION: TODAY AND PROSPECTS

### Abstract

Today, food security occupies an important place in the national security of the country and each region separately. Food security of the region primarily involves providing the population of the region with sufficient quantity, high quality and a wide range of food. Odesa region is a region in which agricultural enterprises and households are engaged in crop production, animal husbandry and their own processing of agricultural products. The general state and problems of food security in the Odesa region were considered, namely, the dynamics of the production volumes of grain and leguminous crops were analyzed, and the current state of development of the animal husbandry industry was studied. The main points that have a significant impact on the formation and development of the livestock products market in this region have been identified. Agricultural enterprises in this region were analyzed, namely the "Bessarabska" branch of "NIBULON" LLC, which today is a grain transshipment terminal, but in the future the company plans to build a full-fledged elevator and a flour mill; "ISMAIL-TRANSBALKTERMINAL" LLC is an oil extraction plant. The expediency of introducing the latest advanced technologies for growing and processing agricultural products is considered. The analysis of the current state of agriculture and agricultural enterprises shows that there is an available raw material base and farm animals are kept in this region. The export of grain crops to foreign markets has significantly decreased compared to previous years, therefore the increased development of animal husbandry is relevant and effective, which will increase the efficiency of the use of available resources, ensure the growth of labor productivity and employment of the population in rural areas. Recipes of compound feed for sheep have been calculated, in terms of the number of which this region is the leader among other regions of Ukraine. It is proposed to create small regional producers of food and compound feed products, which will allow to meet the needs of Odesa's consumers with food and feed products, as well as the export of products with added value.

**Key words:** food security, production, livestock products, farm animals, recipes, compound feed, sheep.

### Introduction

The issue of food security always occupies a leading place in the general national security of each country, as it is a necessary condition for the social and economic stability of the state.

For Ukraine, food security is a factor in supporting the conjuncture of national and regional food markets, which ensure a sufficient level of balanced nutrition and effective development of foreign trade food and raw materials relations, strengthening the export orientation of the agro-industrial complex. [1]

Food security must be considered both at the level of the country and each region, which is determined by the diversity of natural and climatic conditions, the socio-economic status of individual territories, and the demographic situation. Regional food supply is the ability and readiness of the region to satisfy the population's need for food products in volume and calorie content that meet the necessary standards, with the most complete use of the regional production potential. [1]

### The purpose of the study

The purpose of the article is to assess the state of food security in the Odesa region based on the analysis of the dynamics of agriculture, as well as the improvement of the livestock industry.

### Results and its discussion

Agriculture is the basic branch of the economy of Ukraine, which in modern conditions determines not

only the level of food security of the country's population, but also the strategic vectors of the development of the national economy, the export and integration potential of its future existence.

Agricultural enterprises and households of the Odesa region are engaged in crop cultivation, animal husbandry and their own processing of agricultural products.

The leading branches of crop production in the region are grain farming, cultivation of industrial crops - sunflower (everywhere) and sugar beet (in the northern regions), vegetable growing, viticulture and horticulture.

For the year 2021, Odesa Oblast ranked 5th among the regions of Ukraine in terms of gross harvest of grain and leguminous crops (Table 1). [2]

Wheat, barley and corn are grown among the main grain and leguminous crops in Odesa region (Table 2). [2]

The analysis of literary sources on the dynamics of cattle breeding in the world showed that the number of cattle in Ukraine has significantly decreased over the past two decades. (Table 3). [3]

The dynamics of reduction in the number of livestock is observed for almost all species of animals and birds in all regions (Table 4). This was facilitated by crisis phenomena in the livestock industry as a whole. One of the reasons that affected the reduction of the herd was the annual outbreaks of swine disease caused by the African plague virus.

**Table 1 – Production of grain and leguminous crops by region**

Region	2019		2020		2021	
	Gross collection, Thousand quintals	Yield, centner per ha of the harvested area	Gross collection, Thousand quintals	Yield, centner per ha of the harvested area	Gross collection, thousand quintals	Yield, centner per ha of the harvested area
<b>Ukraine</b>	<b>751432,0</b>	<b>49,1</b>	<b>649333,9</b>	<b>42,5</b>	<b>860104,4</b>	<b>53,9</b>
Vinnitsia	59361,6	67,9	40152,7	45,9	65355,3	73,4
Volyn	12926,3	43,4	14011,6	45,1	15092,8	46,1
Dnipropetrovsk	42853,9	38,1	35395,5	32,3	49487,7	43,0
Donetsk	19686,4	33,9	19880,3	34,7	22276,1	37,4
Zhytomyr	27382,6	58,9	25260,8	48,2	33566,6	60,8
Zakarpattia	3916,5	47,1	3270,3	42,0	3628,4	43,6
Zaporizhzhia	33390,8	34,3	29644,3	30,1	38380,5	37,9
Ivano-Frankivsk	7436,1	50,1	8265,3	54,2	10095,0	65,2
Kyiv	42156,9	66,0	29871,7	44,9	45673,5	67,6
Kirovohrad	43466,0	50,4	26890,8	31,4	49811,2	55,4
Luhansk	14464,9	35,5	13759,2	34,5	13911,5	35,5
Lviv	16437,3	51,5	16074,2	52,4	18278,6	58,0
Mykolaiv	31379,0	35,3	23620,6	26,8	39255,4	41,3
Odesa	37479,0	31,0	19550,4	18,5	51053,5	41,2
Poltava	61188,4	60,2	50502,7	50,2	59795,9	59,2
Rivne	14930,1	51,2	14437,4	51,4	17269,9	54,1
Sumy	44325,7	65,1	48196,8	69,1	42607,5	59,0
Ternopil	26998,6	57,3	28373,6	58,5	33036,6	67,8
Kharkiv	44161,4	42,2	48525,6	47,7	49369,1	46,5
Kherson	27397,2	36,2	27199,5	35,0	35287,7	43,4
Khmelnitskyi	37982,4	65,9	39852,8	64,2	48308,0	77,2
Cherkasy	45598,3	66,7	26922,9	38,5	51503,1	72,7
Chernivtsi	6420,3	49,7	5782,0	48,7	7289,4	60,5
Chernihiv	50092,3	65,3	53892,9	65,6	59771,1	71,1

**Table 2 – Production of grain and leguminous crops in Odesa region**

Name	2019		2020		2021	
	Gross collection, thousand tons	Yield, centner per ha of the harvested area	Gross collection, thousand tons	Yield, centner per ha of the harvested area	Gross collection, thousand tons	Yield, centner per ha of the harvested area
Whole grains and legumes: including:	37479,0	31,0	19550,4	18,5	51053,5	41,2
Wheat	20116,0	30,5	9765,8	17,8	26428,2	39,0
Barley	10173,9	29,0	5244,7	17,8	14989,0	40,5
Corn for grain	6134,7	43,4	3721,1	26,7	8381,1	61,0
Oat	17,0	11,5	20,6	9,7	46,9	25,8
Sorghum	127,7	26,3	117,4	10,9	251,1	34,5
Pea	460,0	16,9	213,3	10,4	422,6	21,0

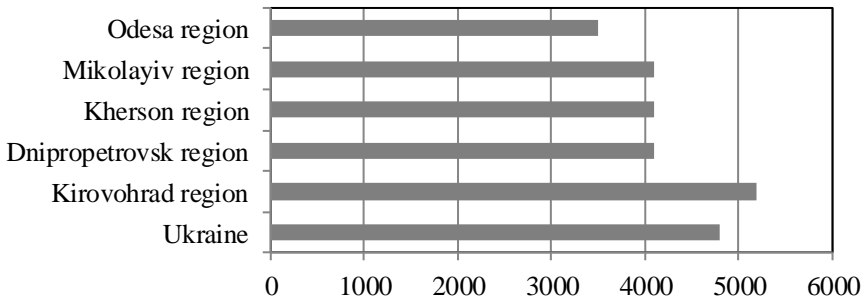


**Table 3 - Development of cattle breeding in the world during 2000-2018**

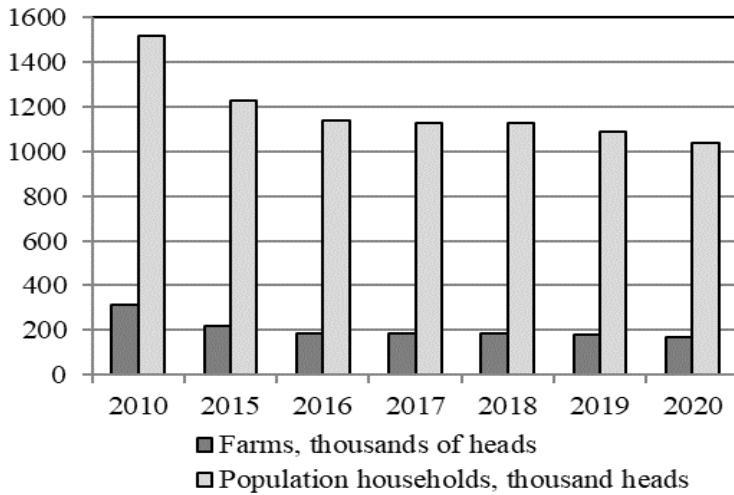
A world-class place		20 countries with the largest number of cattle herds in 2018 and Ukraine	The number of cattle herds, thousands of heads		Increase or decrease in the number of animals until the year 2000	
2000	2018		2000	2018	thousand heads	%
2	1	Brazil	169875,5	213523,1	43647,5	125,7
1	2	India	191924,0	184464,0	-7460,0	96,1
5	3	USA	98199,0	94298,0	-3901,0	96,0
3	4	China	104553,6	63417,9	-41135,6	60,7
8	5	Ethiopia	33075,3	62599,7	29524,4	189,3
6	6	Argentina	48674,4	53929,0	5254,6	110,8
14	7	Pakistan	22004,0	46084,0	24080,0	209,4
9	8	Mexico	30523,7	34820,3	4296,5	114,1
7	9	Sudan	37093,0	31223,0	-5870,0	84,2
22	10	Chad	11460,0	29063,2	17603,2	253,6
16	11	United Republic of Tanzania	16713,0	27427,7	10714,7	164,1
11	12	Australia	27588,0	26395,7	-1192,3	95,7
12	13	Colombia	24363,7	25557,3	1193,6	104,9
13	14	Bangladesh	22310,0	24086,0	1776,0	108,0
18	15	Nigeria	15118,3	21418,2	6299,9	141,7
23	16	Kenya	11444,8	19635,1	8190,3	171,6
15	17	France	21256,2	18547,1	-2709,2	87,3
10	18	Russian Federation	28060,3	18294,2	-9766,1	65,2
27	19	Myanmar	10982,0	17418,4	6436,4	158,6
17	20	Venezuela (Bolivarian Republic)	15164,4	16960,2	1795,8	111,8
28	68	Ukraine	10626,5	3530,8	-7095,7	33,2

**Table 4 – Number of farm animals by region**

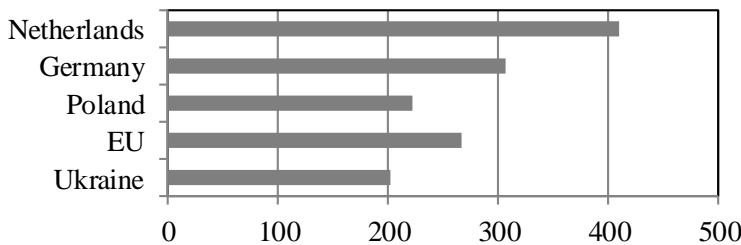
Region	Year	Cattle		Pigs		Sheep and goats		Poultry	
		2022	2021	2022	2021	2022	2021	2022	2021
<b>Ukraine</b>		<b>2662,8</b>	<b>2874,0</b>	<b>5611,9</b>	<b>5876,2</b>	<b>1093,0</b>	<b>1140,4</b>	<b>202243,1</b>	<b>200651,9</b>
Vinnitsia		185,6	200,7	203,0	240,2	26,7	27,7	38064,2	33619,3
Volyn		110,6	114,1	241,1	250,8	17,2	16,6	7947,0	7989,1
Dnipropetrovsk		87,6	111,9	296,6	332,0	44,5	52,9	20687,1	19589,1
Donetsk		45,9	49,8	406,6	484,3	34,9	35,5	4089,2	4374,7
Zhytomyr		153,7	168,1	117,7	136,8	21,4	21,4	7121,9	7205,2
Zakarpattia		118,2	123,7	221,2	252,2	138,9	148,1	3470,0	3651,9
Zaporizhzhia		53,9	68,6	126,6	176,9	54,8	58,0	2622,0	3887,1
Ivano-Frankivsk		112,6	120,5	287,5	306,1	28,3	26,8	4045,5	4300,3
Kyiv		103,6	107,8	639,1	555,4	36,9	29,3	22440,5	23525,3
Kirovohrad		70,1	75,2	195,9	203,8	28,3	31,0	4501,5	4711,6
Luhansk		33,5	38,4	41,0	46,0	19,7	22,2	838,9	849,3
Lviv		126,7	144,3	435,3	362,7	29,8	31,8	11576,9	10305,8
Mykolaiv		66,6	74,0	67,6	72,6	41,3	43,9	1994,7	1957,1
Odesa		136,9	138,4	125,7	133,1	263,1	269,2	1852,9	2210,7
Poltava		187,3	191,9	318,8	321,9	44,2	44,8	5225,3	4663,0
Rivne		89,0	92,1	219,5	226,2	16,8	15,8	7285,9	7464,4
Sumy		105,1	129,4	88,5	103,7	29,9	35,3	4634,0	4577,0
Ternopil		128,8	132,8	387,3	354,3	17,1	15,8	5208,3	5376,3
Kharkiv		134,2	151,9	157,1	192,7	47,3	65,2	6262,0	6674,9
Kherson		57,3	66,4	52,6	99,0	21,1	23,9	4033,2	5318,9
Khmelnitskyi		218,2	219,4	357,4	324,4	40,3	33,2	6213,3	6649,1
Cherkasy		130,0	137,1	327,9	346,6	25,2	25,6	25423,8	24996,4
Chernivtsi		69,9	73,2	107,7	146,4	42,2	42,0	3315,3	3357,5
Chernihiv		137,5	144,3	190,2	208,1	23,1	24,4	3389,7	3397,9



**Fig. 1. Milk yield per 1 cow in an average of 5 years, kg**



**Fig. 2 – Dynamics of the sheep and goat population in Ukraine, thousands of heads**



**Fig. 3 – Consumption of dairy products in milk equivalent in 2019, kg/person/year [6]**

According to statistical data, agricultural animals are kept in Odesa region - cattle, pigs, poultry, sheep and goats. In terms of the number of sheep and goats, Odesa Oblast ranks first among other regions and accounts for 24% of the total number of these animals in Ukraine. [2] The number of cattle, including dairy cows, in the Odesa region is much more than in the Dnipropetrovsk, Kirovohrad, Mykolaiv and Kherson regions. However, the yield of milk per cow in an average of 5 years in the Odesa region is significantly lower, compared to other regions, Fig. 1.

The production of lamb and natural cheeses from sheep's milk is currently at a low level in Ukraine. The decrease in the number of sheep (Fig. 2) increases the demand for both meat and dairy products of these animals. The solution to this problem lies in a new approach to raising these animals, which will allow growing sheep for meat, which is considered a delicacy, as

well as to obtain wool and, especially, milk, without which you cannot make natural tasty cheese. [2,5]

According to FAO, 16% of human energy comes from food of animal origin, in particular milk. Currently, the consumption of this product in Ukraine is lower than medically recommended. On average, a Ukrainian consumes about 200 kg of milk and dairy products per year, which is half the annual norm of 380 kg/person recommended by the Ministry of Health. Our neighboring countries, such as the Netherlands, Poland and Germany, consume many times more dairy products (Fig. 3).

Inadequate consumption of dairy products throughout a person's life leads to a constant increase in the share of chronic diseases associated with calcium, vitamin D and protein deficiency. First of all, we are talking about diseases of the cardiovascular and locomotor systems. [6]

The position of the dairy industry is deteriorating every year (Table 5), Ukraine, unfortunately, is increasingly focusing on the import of dairy products, indicating the non-competitiveness of the national dairy industry, which is unable to meet the needs of the domestic market. During the last three years, the import of dairy products has grown at a sharp and unexpected pace: in 2018 - by 39%, in 2019 - by 67%, in 2020 - by 113%. [6]

**Table 5 –Production of the main types of animal husbandry products per person [7]**

Year	Meat	(in slaughter weight)	Milk
1990	84,0	472,3	314
2000	33,8	257,4	179
2015	54,2	247,8	392
2017	54,6	242,0	365
2018	55,7	238,1	382
2019	59,3	229,9	397

According to the Ukrainian Statistical Service, the population of sheep and goats decreases every year. The decrease concerns both farms and the presence of livestock in the population (Table 6). [2] So, in 2021, there were 242.8 thousand goats and sheep in households, and in 2022 - 237.5 thousand.

**Table 6 – Sheep and goat population dynamics in Ukraine and Odesa region**

Year	2018	2019	2020	2021	2022
Farms of all categories, thousands of heads					
Ukraine	1304,5	1264,8	1192,8	1140,4	1093,0
Odesa region	354,1	329,5	295,5	269,2	263,1
Farms, thousands of heads					
Ukraine	192,2	190,3	165,7	151,3	169,1
Odesa region	54,4	49,2	36,2	26,4	25,6
Population households, thousand heads					
Ukraine	1112,3	1074,5	1027,1	989,1	923,9
Odesa region	299,7	280,3	259,3	242,8	237,5

Despite the considerable potential of Ukraine in the development of animal husbandry, namely: the availability of favorable natural and climatic, land, labor resources, etc., this branch of agriculture is in a rather difficult state. Having analyzed the situation of the development of the livestock industry, it is possible to draw a conclusion about the negative trends in the development of cattle breeding: a reduction in the number of animals, a significant decrease in the productivity of livestock, deterioration of its qualitative composition. Of course, these circumstances led to a deterioration in the quality of cattle products and a decrease in production volumes, and hence the consumption of valuable food products.

For successful animal husbandry, it is necessary to invest in modern technologies of maintenance, feed, high-quality livestock, form a staff of qualified workers, obtain all permits and pass standardization, have a stable product sales market, ensure conditions for production and storage of products. [8]

It should be noted that, according to the analysis of agricultural enterprises of Ukraine in 2019, more than 50% of the cost structure for the production of animal husbandry products, in particular cattle breeding, is the cost of harvesting and feeding fodder. [3]

The main feature of the economic and geographical location of the Odesa region is its coastal and border location. Wide access to the Black Sea basin and to large river highways - Danube and Dniester, which determines its great advantages and transport possibilities. Effective waterways (sea and river) make it possible to expand the region's economic ties with Eastern and Central Europe (along the Danube). The port of Odesa and other ports of the region are located at the hub of intensive sea and river transport international connections, which determines its significant transport and transit potential.

Today, due to disruptions in logistics and blockade of seaports, prices for grain and oil crops are falling, while prices for meat and milk are rising, so animal husbandry is becoming a profitable direction.

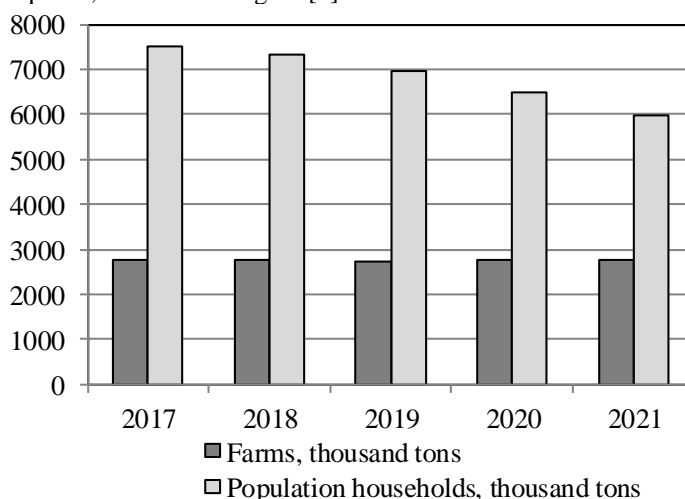
The export of grain crops to foreign markets has significantly decreased compared to previous years, therefore the increased development of animal husbandry is relevant and effective, which will increase the efficiency of the use of available resources, ensure the growth of labor productivity and employment of the population in rural areas.

The development of animal husbandry will ensure the transition from the export of raw materials to the export of finished products with added value, which to-

day is one of the urgent tasks of the development of the agro-industrial complex of Ukraine. The main attention is paid to small regional producers who, due to a number of macro- and microeconomic factors, were forced to produce a smaller amount of products compared to vertically integrated holdings that dominated both domestic and foreign markets with dairy and meat products. [8]

In addition, the damage to the logistics infrastructure has led to supply disruptions, so small regional producers are reliable enterprises in providing the population of the regions with food products.

Usually, the rural population is engaged in animal husbandry in order to obtain additional income, in some places, animal husbandry is the main source of income for the rural population. The dynamics of gross milk production in Ukraine in 2017-2021, comparing milk production by households and agricultural enterprises, is shown in Fig. 4. [2]

**Fig. 4 – Dynamics of milk production by sector in 2017-2021, thousand tons**

As of 2021, 68.5% of milk was produced by households, but the share of milk produced by households is decreasing every year. The volume of milk produced by agricultural enterprises is almost unchanged.

In terms of production volume as of January 1, 2022, Odesa region in Ukraine ranks: milk production - 17th place, meat sales - 21st place. The share of production of livestock products by categories of farms is shown in fig. 5. [2]

Today, the largest agricultural exporter in Ukraine is "NIBULON" LLC, which unites a group of companies and branches throughout the country.





"Bessarabska" branch of "NIBULON" LLC is a new terminal built in September 2022 in the city of Izmail on the Danube River.

The branch serves the interests of a wide range of small and medium-sized agricultural producers.

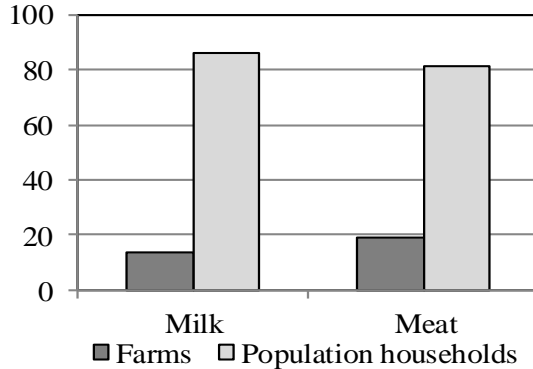


Fig. 5 – Share of production of livestock products by categories of farms, %

NIBULON's purchasing activity in the interests of Izmail covers Zhytomyr, Kyiv, Sumy, Vinnytsia, Cherkasy, Poltava, Dnipropetrovsk, Kirovohrad, Khmelnytsky and Ternopil regions and, of course, the south of Ukraine. [9]

This branch has a capacity of 300,000 tons per month and shows a gradual increase in indicators: from January to May 2023, it was possible to increase exports by 44% from 100,000 tons to about 190,000 tons per month.

This enterprise provides opportunities for transshipment of grain on river transport, and then delivery to the Romanian seaport of Constanta, from where grain is transshipped from barges to sea vessels of various classes and sizes. Thus, the "Bessarabska" branch ensured the possibility of stable export of "NIBULON" during the war in the conditions of unstable operation of the grain corridor. [9,10]

"NIBULON" company is considering the possibility of building a full-fledged elevator, designed for

Table 7 - Composition and nutritional value of the calculated compound feed recipes for sheep

Components and quality indicators	SHC-81-1-98	SHC-81-2-100	SHC-80-101	SHC-83-102	SHC-83-1-103
Wheat	13,4	2,3	30,0	16,0	20,7
Barley	-	14,1	5,2	-	
Triticale	20,0	25,0	25,0	25,0	25,0
Wheat bran	15,0	20,0	20,0	20,0	20,0
Wheat fodder flour	20,0	20,0	10,0	20,0	20,0
Full fat soybean, CP 37 %	4,0	1,2	-	-	-
Sunflower meal, CP 38 %	-	10,0	-	10,0	-
Soybean meal, CP 46 %	-	-	-	0,9	-
Sunflower press cake, CP 34 %	20,0	-	6,8	-	10,0
Fodder yeast, CP 44 %	4,0	5,0	-	5,0	1,0
Salt	0,4	-	-	-	-
Monocalcium phosphate	-	0,5	-	0,1	0,3
Defluorinated phosphate	1,2	0,5	2,0	2,0	2,0
Feed chalk	1,0	0,4	-	-	-
Premix for lambs up to 4	1,0	-	-	-	-
Premix for young sheep older than 4 months and ewes, 1 %	-	1,0	1,0	-	-
Premix for rams, 1 %	-	-	-	1,0	1,0
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
Price of feed, UAH/t	7795,00	7493,00	6824,00	7549,00	6956,00
Metabolizable energy, MJ/kg	11,7	6,6	9,0	6,7	7,2
The mass fraction, %:					
crude protein	19,00	17,00	13,66	17,00	14,97
crude fat	6,24	2,60	3,35	2,32	4,00
crude fiber	6,98	6,04	5,27	5,61	5,72
crude ash	6,01	4,55	4,66	5,12	5,15
calcium	0,84	0,51	0,69	0,75	0,76
phosphorus	0,81	0,80	0,80	0,90	0,90
NaCl	0,50	0,12	0,11	0,10	0,10



simultaneous storage of 118.5 thousand tons of grain, and a high-tech modern mill with a capacity of 750 tons per day. [9,10]

Storage and processing of grains into flour will allow to meet the needs of the domestic consumer of the southern regions of Ukraine, as well as the export of value-added products. This is very important for the Danube region, where there are no storage and accumulation containers, which significantly worsens unloading.

LLC "ISMAIL-TRANSBALKTERMINAL" is an oil extraction plant located in the city of Izmail, Odesa region. This enterprise was founded in 2003. The main field of activity of the enterprise is the processing of oil crops, as well as the wholesale trade of their processing products, such as: unrefined sunflower and rapeseed oil, sunflower meal, as well as pellets from sunflower husks. [11]

Having analyzed the current state of agriculture and agricultural enterprises in Odesa, it should be noted that there is an available raw material base and farm animals are kept in this region. In terms of the number of sheep, this region is the leader among other regions of Ukraine.

Sheeps must receive a highly concentrated compound feeds, balanced in terms of all nutrients and biologically active substances, in order to realize their genetic potential. [12-14]

We calculated the recipes of compound feeds for sheeps of all age groups and their purpose using the software complex (tabl. 7):

- for young sheeps up to 4 months SHC-81-1-98;
- for young sheeps older than 4 months SHC-81-2-100;
- for pregnant ewes and suckling sheeps SHC-80-101;
- for rams-producers of the mating period SHC-83-102;
- for rams-producers of the non-mating period SHC-83-1-103.

Compound feed recipes include grain raw materials, by-products of the flour industry, sunflower and soybean cakes and meal, fodder yeast, mineral components and premixes.

The cost of the calculated recipes changes in proportion to changes in the nutritional value of compound feeds.

### Conclusions

The food security of the region should be aimed at providing all sections of the population with food in the required quantity, assortment and quality. An important condition for ensuring food safety is the consistent implementation of a set of relevant measures.

It is advisable to implement the latest advanced technologies for growing and processing agricultural products. The creation of small regional producers of food and feed products will ensure the needs of Odesa consumers with food and feed products, as well as the export of products with added value.

### REFERENCES

1. Bublik I. V., Zapotots`kiy S. P. Prodoval`cha bezpeka rehioniv Ukrayini // Natsional`ne gospodarstvo Ukrayini: teoriya ta praktika upravlinnya. 2009. S. 145-153.
2. Statistichna informatsiya [Veb-sayt]. - URL: <https://ukrstat.gov.ua/> (data zvernennya: 17.10.2022)
3. Ahrobiznes s`ohodni [Veb-sayt]. - URL: <http://agro-business.com.ua/agro/ekonomichniy-hektar/item/19347-yak-zabezpechiti-pributkovist-skotarstva.html> (data zvernennya: 17.10.2022)
4. Agronews [Veb-sayt]. - URL: <https://agronews.ua/news/nazvano-seredniy-nadiy-moloka-na-korovu-v-ukraini/> (data zvernennya: 25.10.2022)
5. Pro-Consulting [Veb-sayt]. - URL: <https://pro-consulting.ua/ua/biznes-plan/biznes-plan-organizacii-ovechey-fermy-i-proizvodstva-syra-s-ovechego-moloka> (data zvernennya: 17.10.2022)
6. Lupeyko Yu. O., Malik M. Y. I. Orhanizatsiyno-ekonomichne zabezpechennya rozvitku simeynikh fermers`kikh gospodarstv. NNTS IAE, 2019. 84 s.
7. Lupeyko Yu. O., Malik M. Y., Kasil` M. I. Metodichni rekomendatsiyi z orhanizatsiyi simeynikh ferm v Ukrayini (na prikladi ferm z virobnitstva moloka). K: NNTS «IAE», 2014. 60 s.
8. SD Platformi [Veb-sayt]. - URL: <https://sdplatform.org.ua/blogs/farm> (data zvernennya: 25.10.2022)
9. ELEVATORIST.COM [Veb-sayt].-URL: <https://elevatorist.com/kompanii/120-nibulon> (data zvernennya: 25.10.2022)
10. Agravery [Veb-sayt].-URL: <https://agravery.com/uk/posts/show/nibulon-planue-suttevo-zbilsiti-potuznosti-filii-bessarabska-v-portu-izmail> (data zvernennya: 25.10.2022)
11. ООО «IZMAIL-TRANSBALKTERMINAL» [Veb-sayt]. - URL: <https://bessarabia-group.com/> (data zvernennya: 17.10.2022)
12. Biolojiya produktivnosti sil`s`kohospodars`kikh tvarin: navchal`niy posibnik / Susol R. L. ta in. Odesa, 2019. 288 s.
13. Praktikum z hodivli sil`s`kohospodars`kikh tvarin: navchal`niy posibnik / Ibatullin I. I. ta in.; za red. Akademika NAAN Ukrayini I.I. Ibatullina. K, 2014. 422 s.
14. Kitayeva A. P. Skladovi efektiivnoho virobnitstva produktsiyi vivcharstva // Ahrarniy visnik Prichornomor`ya. Odesa: «TES». 2017. №84-1. S. 25-31.



УДК [636.32/.38:636.03]:338.439.6(477.74)

Т.М. Турпурова, канд. техн. наук, доцент, E-mail: turpurova.tatyana@gmail.com

Н.В. Ворона, канд. техн. наук, доцент, E-mail: tarnin@te.net.ua

Кафедра технології зерна і комбікормів,

Одеський національний технологічний університет, вул. Канатна, 112, м. Одеса, 65039, Україна

## ПРОДОВОЛЬЧА БЕЗПЕКА ОДЕЩИНИ: СЬОГОДЕННЯ ТА ПЕРСПЕКТИВИ

### Анотація

Продовольча безпека сьогодні займає важливе місце в національній безпеці країни та кожного регіону окремо. Продовольча безпека регіону передусім передбачає забезпечення населення регіону достатньою кількістю, високою якістю та широким асортиментом продовольства. Одеська область – це регіон, в якому сільськогосподарські підприємства і господарства населення займаються рослинництвом, тваринництвом і власною переробкою сільськогосподарської продукції. Розглянуто загальний стан й проблеми продовольчої безпеки Одеської області, а саме проаналізовано динаміку обсягів виробництва зернових та зернобобових культур, досліджено сучасний стан розвитку галузі тваринництва. Виявлено основні моменти, які мають значний вплив на формування й розвиток ринку продукції тваринництва в даному регіоні. Проаналізовано сільськогосподарські підприємства в даному регіоні, а саме філію «Бессарабська» ТОВ «НІБУЛОН», яка сьогодні є терміналом по перевантаженню зерна, але в майбутньому компанія планує побудувати повноцінний елеватор та борошномельний завод; ТОВ «ІЗМАЇЛ-ТРАНСБАЛКТЕРМІНАЛ» – оліє-екстракційний завод. Розглянуто доцільність впровадження новітніх передових технологій з вирощування та переробки сільськогосподарської продукції. Аналіз сучасного стану сільського господарства та сільськогосподарських підприємств свідчить, що в даному регіоні є наявна сировинна база та утримуються сільськогосподарські тварини. Експорт зернових культур на зовнішні ринки суттєво змінився, в порівнянні з попередніми роками, тому актуальним та ефективним є посилення розвитку тваринництва, що дозволить підвищити ефективність використання наявних ресурсів, забезпечити зростання продуктивності праці та зайнятості населення в сільській місцевості. Розраховано рецепти комбікормів для овець, по кількості яких даний регіон є лідером серед інших регіонів України. Запропоновано створення невеликих регіональних виробників харчової та комбікормової продукції, що дозволить забезпечити потреби споживачів Одещини харчовими та кормовими продуктами, а також експорту продукції з доданою вартістю.

**Key words:** продовольча безпека, виробництво, продукція тваринництва, сільськогосподарські тварини, рецепти, комбікорм, вівці.

Received 29.10.2022

Reviewed 08.11.2022

Revised 25.11.2022

Approved 20.12.2022



### Cite as Vancouver Citation Style

Turpurova T., Vorona N. Food security of the Odessa region: today and prospects. Grain Products and Mixed Fodder's, 2022; 22 (4, 88): 28-35. DOI <https://doi.org/10.15673/gpmf.v22i4.2535>

### Cite as State Standard of Ukraine 8302:2015

Food security of the Odessa region: today and prospects. / Turpurova T. et al. // Grain Products and Mixed Fodder's. 2022. Vol. 22, Issue 4 (88). P. 28-35. DOI <https://doi.org/10.15673/gpmf.v22i4.2535>

ISF

International  
School of  
Feed

## International School of Feed

European Feed Manufacturers' Federation  
European Federation of Food Science and Technology  
Association "Feed Producers Union of Ukraine"  
Odesa National University of Technology  
with the support of the "Club of Young Scientists"

# Міжнародна Школа Кормів

## VIII СЕСІЯ «МИСТЕЦТВО ВДОСКОНАЛЕННЯ ТЕХНОЛОГІЙ, БЕЗПЕКИ ТА ЯКОСТІ КОМБІКОРМІВ»

### 3-9 липня 2023 року

<http://isf.ontu.edu.ua>