

STUDY ON THE DAIRY COWS BREEDING IN FARMS FROM THE EASTERN CROSS-BORDER AREA OF ROMANIA

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Abstract

The paper was meant to be an analysis of the actual number of bovines, type and size of holdings, technical endowment of the holdings, as well as the welfare norms of the animals in the Romanian cross-border area. The research took place between 2013 and 2015 in the Romanian, Ukrainian and Republic of Moldova cross-border area.

The situation of the shelters in the Romanian cross-border area is the following: 5.6% of the holdings have accommodation spaces for one animal; 31.34% of the holdings have accommodation spaces for two animals (adult animal + youth); 3.7 % of the holdings have accommodation spaces for three animals (adults + youth); 1.98% of the holdings have accommodation spaces for four animals; 0.8 % of the holdings have accommodation spaces for five animals; 36.06 % of the holdings have accommodation spaces for adult + youth bovines and for equines; 21.11% of the holdings have accommodation spaces for bovines (adults + youth), ovine and swine.

Among the 26 districts of the Odessa region, Ukraine, the number of cattle's registered a slight increase in only 12 districts, with a decreasing number at the level of the total cross-border area.

In the Republic of Moldova, the number of bovines for all categories of farms decreased. If on January 1st 2006 the total number represented 311 thousand pieces, including 217 thousand cows, on January 1st 2013 there were 191 thousand, respectively 134 thousand pieces or 38.5 respectively 38.2 % less. Situation in the agricultural sector is similar. The reduction of the total number of bovines, as well as of the total number of cows represented 50%. Starting with 2008, when referring to farms, we can mention an increasing trend of the complement of bovines, increased by 2.5 times on January 1st 2013 both for the total number, as well as for the number of cows. As regards the population's farms, which comprise most of the complement, this decreases from year to year, from 291 thousands in 2006 to 180 thousands in 2013 or by 38.2%, including cows, from 209 thousands to 130 thousands or by 37.8%.

We hereby ascertain that both in the Romanian cross-border area and in the Ukrainian and Republic of Moldova cross-border area, the assignment of the factors of production in the analyzed farms, of high or family-type complements, is under the actual need, as the current conditions, mainly the financial conditions, only allow the use of certain factors of production (race, fodder). If in Romania European financing contributed to the performance improvement, farmers in Ukraine and the Republic of Moldova face big deficiencies.

Key words: complements, farms, cows, milk, area, cross-border

INTRODUCTION

On October 1st 2013 an European 90% financing agreement was signed for the cross-border project called MIS ETC 1549, where three universities were involved, namely the University of Agricultural

Sciences and Veterinary Medicine of Iași Romania, the State Agricultural University of Odessa, Ukraine and the State Agricultural University of Kishinev, Republic of Moldova. The general target of this project was represented by the improvement of the economical performances of the cross-border area by agricultural durable modernization and facilitation. Other special objectives concretized each stage of the project as

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follows: the creation of a common supervision network of bovine productions from a quantitative and qualitative point of view in the three partner countries; the common development and implementation of a tool-software for milk and meat quality supervision; the organization of two pilot farms for quantitative and qualitative ratings in Romania and in the Republic of Moldova, as well as the implementation of a cross-border common study regarding productions and good practices in bovine breeding [7]. Thus, upon study completion, results were obtained and conclusions were formulated to help in making a decision regarding the sustainability and good practices of productions in bovine breeding [4-6]. The paper hereby presents a part of the result we obtained in the cross-border area in Romania, Ukraine and the Republic of Moldova, referring to the structure of animal breeding holdings and bovine complements in the Eastern Romanian cross-border.

MATERIAL AND METHOD

The research took place between 2013 and 2015 in the cross-border areas in Romania, Ukraine and the Republic of Moldova [5, 7]. Within this period of time we monitored: the bovines complements, the type and size of holdings, the holdings technical endowment, as well as the animals' welfare norms. The primary data were extracted from the holdings records, as well as from the records of administrative offices. They were organized, statistically processed and interpreted by specific means for such researches [8-11]. The statistics, namely the parameters that characterize a normal distribution, are the media or median on one hand and the dispersion coefficients represented by variance and standard deviation of the monitored character on the other hand. The statistics shall be marked by Latin letters: arithmetic mean ($\bar{X}$), variance (s^2), standard deviation (s), and the parameters by Greek letters: theoretical mean (μ), variance (σ^2) and standard deviation (σ). For this, we used the S.A.V.C. (Statistics Analysis of Variance and Co-variance 2003) software to calculate the arithmetic mean

($\bar{X}$), error of arithmetic mean ($\pm s_{\bar{X}}$) standard deviation (s), coefficient of variation ($V\%$) and ANOVA significance tests ANOVA respectively p [1].

We must mention that the data analysis was made by means of connections and correlations with numerous observations made directly in farms and by reporting the results to the norms and requests of the European Union (EU) [2, 3].

RESULTS AND DISCUSSIONS

A characteristic of agricultural holdings in Romania and in the cross-border area is represented by structural dualism, respectively the existence of a reduced number of high and very high holdings, on one hand and of a significant number of small and very small agricultural holdings on the other hand. The middle sized or family holdings of trading character are still in course of development.

This could generate important social and economic benefits in comparison with other types of holdings. The land surface of agricultural holdings in the individual sector was extended.

Taking into account Romania's conditions, the current state of structural reforms in agriculture and the estimation of their evolution, we can easily delineate organizational structures of agricultural holdings, according to the Romanian family tradition and the requests of agricultural performance that shall record deep structural mutations in the sense of trading family holdings preponderance and great agricultural trading farms, of holding type trading companies.

Based on the specialty bibliography, we can retain that most of the studies, analyses and estimations made by specialized institutions maintain the conclusion according to which during the following period the individual agricultural farm stays because of the specific situation of Romanian agriculture, an important agricultural production structure that during the evolution of the structures to performance shall transform or integrate itself in family private holdings, of more accentuated trading

character, in family agricultural farm or agricultural trading companies for land leasing or agricultural companies for agricultural production of trading character shall constitute the base of Romanian production agricultural structures. Then, following the qualitative accumulations, we shall witness a polarization of the two variants, respectively the Western European model represented by family trading agricultural holdings (the classic agricultural farm) and the great holding type agricultural trading companies, of American inspiration.

In order to support those stated above, we also have the current PAC orientations regarding the development and social and economic role of the rural space, to consider agriculture not only as an economic branch producing agricultural goods that bring profit, but also as a style of life. As the academician Păun Ion Otiman states: *"the agricultural structure hosts all types of holdings, each type of holding must play its role, for each type of holding one must find the proper ways to financial support and for each type of holding one must find the top managerial system"*.

The development strategy set by the Ministry of Agriculture and Rural Development for the period between 2000 and 2015, forecasts a variance of agricultural dimensions and structures evolution, which offers certain appreciations and estimations as regards the types of agricultural holdings that that shall be functional in Romania.

The estimations underline that the subsistence family holdings shall decrease by the year 2020, reaching to 13.5 % of the agricultural surface of the country. In comparison with the year 1999, the family businesses shall double, reaching 20.2 % of the agricultural surface and an average size of 200 ha, while the private sector shall detain 1475 thousand holdings with 74.5% of the agricultural surface.

The family type farms represent the structure organizational variant towards most of the individual agricultural farms shall tend to. These agricultural production structures shall stand out along with the production

accentuation concentration and modernization becoming agricultural units that mainly produce to merchandise.

The family-type trading farms shall come to a remarkable evolution, reaching to over 50 thousands units of production by 2020, with an average surface of 30 ha and they shall have a percentage of over 10 % of the arable surface of the country. At the same time, state agricultural trading companies shall represent only 7.9% of the country agricultural surface and they shall significantly reduce.

From the study we performed in the Eastern Romania cross-border area (tab. 1) we obtained the following distribution of the cattle's complement, based on the holdings size: 88.79 % of the holdings detain 1 cow; 9.78 % of the holdings detain 2 cows; 1.35 % of the holdings detain 3 cows; 0.08 % of the holdings detain 5 or more cows.

The micro-farms detaining 1-5 cows, which are more frequent in the analyzed area, provide the entire internal milk and dairy consumption, being valorized as merchandise to a lower extent.

The total production expenses are smaller thanks to the more efficient use of local fodder resources simple shelters and no special technical endowments. Beside the factors of production, the use of own resources of 70 %, the financial allotment is resumed to 7 % expenses for medicines and sanitary and veterinary maintenance, 27 % expenses for concentrated fodders and 4 % expenses for development and procurement. We notice that in case of family micro-farms the assignment of factors of production is under the needed level, as the current conditions, especially the financial ones, only allow the use of certain factors of production (race, fodders).

In case of micro-farms with more than 15 cows, which can also provide merchandise for the market, the employed labor used entirely or partially comes from outside the agricultural holdings? The private producer detracts from his profit from salary payments by producing fodders, maintaining and breeding animals.

Table 1 Distribution of cattle's complements per agricultural holdings in counties of the Easter cross-border area

Type and size of the holding		Suceava		Botoșani		Vaslui		Iași		Area average value	
Dairy cows	Cattle's to fatten	Dairy cows	Cattle's to fatten	Dairy cows	Cattle's to fatten	Dairy cows	Cattle's to fatten	Dairy cows	Cattle's to fatten	Dairy cows	Cattle's to fatten
1-2	1-2	1.0	1.1	1.1	1.4	1.13	1.2	1.4	1.6	1.1	1.3
3-5	3-5	4.1	4.6	4.0	4.1	3.14	4.0	4.0	4.0	3.8	4.1
6-10	6-15	8.0	12.0	8.0	7.5	7.0	10.8	8.0	10.2	7.8	10.1
11-15	16-25	13.0	24.0	11.7	20.5	13.0	26.0	12.8	17.0	12.6	21.8
16-20	26-35	18.1	30.5	18.0	27.0	18.0	29.5	-	-	18.0	29.6
21-30	36-50	25.0	46.0	-	-	28.0	37.0	26.0	-	26.3	41.5
31-50	51-100	34.0	78.0	39.6	80.3	38.0	96.0	-	51	37.2	76.3
51-100	over 100	98.0	618	56.0	381	63.5	1182	-	514	72.5	673
Over 100		187.2		346		230		262		256.3	

In the studied area, we distinguish the following types of micro-farms: *micro-farms deriving from the partial or total use of the biological material* and investments resulting from the dissolution of the ex-cooperative structures, but with no private fodder base and with lots of improvisations; *multi-active micro-farms* with tradition in dairy cows breeding using simple constructions, made of local materials, for lodging the animals, the labor force, families and private fodder resources from different parcels situated at different distances from the micro-farm headquarters and of scarce road infrastructure; simple technical endowment and milk exploitation is partially made in markets, while most of it is meant to internal consumption; *micro-farms exploiting the dairy cows during summer time, in the so-called "cow shelters"* organized by the local councils or by certain owners that become partners or by association of the owners with those who only perform milk processing activities in small processing units; *micro-farms with milk purchase and dairy processing activities* or fresh fermented products with direct selling on the market or in different collectivities based on specific agreements [8, 12].

From the diversity of the traditional systems of dairy cows breeding, the most famous is the one currently applied, namely *mixed animals breeding* on the fields near villages and the accommodation in private houses.

In the cross-border area, about 80 – 90% of the cows are currently bred in individual farms and 10 % in productive labor force farms. The cow's complements in this area do not exceed the normal labor capacity of a family, being situated between two limits: a minimum one to 5 UVM and a maximum one of 15 – 20 UVM.

As regards the dairy cows breeding and exploitation in micro-farms, we appraise this is meant to continue the existing traditions, with sheltering in simple constructions, with little mechanization facilities and hygiene conditions that are insufficient for a good maintenance for the entire year.

The shelters situations is the following: 5.6% of the holdings detain shelters for one animal; 31.34% of the holdings detain shelters for two animals (adult animal + youth); 3.7 % of the holdings detain shelters for three animals (adults + youth); 1.98% of the holdings detain shelters for four animals; 0.8 % of the holdings detain shelters for five animals; 36.06 % of the holdings detain shelters for adult + young bovines and for equines; 21.11% of the holdings detain mixed shelters for bovines (adults + youth), sheep and pigs.

As regards race and productive performance in the studied area, we notice great differences. Thus, in Suceava county, the Pinzgau and Romanian pied breeds are predominant and people own 2-3 such cows; in Botoșani county, the predominant race is the Romanian pied, while in Iași, Vaslui and

Galați counties, the black and pied breeds predominate.

The fodder resources in the zonal ecosystem vary, allowing the obtaining of about 2500-4500 kg milk/lactation. In this area, we notice that a cow producing 10 kg/day needs 1.5 ha of field.

As regards the cows foddering in rural establishments, we notice a high deficiency in the almost complete lack of succulents, especially of ensiled bait, as foddering is based on green bait in the fields during summer time and hays in association with raw (straws, stalks) during winter time. Among concentrated baits, they use insignificant quantities of bran and sunflower grits.

The Odessa region is situated in the South-Western Ukraine and it covers a surface of 250 km from the seaside to the Northern area. The seaside area covers a surface of 300 km. Its neighbors are the following: Moldova and Romania to the West, the Vynitsya and Kirovograd regions to the North, the Mykolaiv region to the East and part of the Ukrainian border to the South West neighbors Romania. The total length of the state cross-border in the area measures 1362 km. The South and Southeast of the region is bordered by the Black Sea coast. Snake Island is part of the region territory, with a surface of 33.3 thousands km² (5.5% of the Ukraine surface), being the largest region in Ukraine.

Agriculture is the main activity field, in terms of volume of products and high number of employees, as 35 % of the population works in this sector, more than half of the production units is centered here, producing 42% of the gross domestic product (GDP) and 80% of the miscellaneous consumer goods.

From the total of the Ukrainian gross agricultural product, the regional quota exceeds by 5.3%, cereals – 7.5%, sunflower – 8.1%, grapes – 45.5%, meat – 4.5%, milk – 4.8%, eggs - cu 6,3%.

The climatic and environmental conditions of the region imprint the specificity of the agricultural businesses according to the area profile and specialization: bovines breeding cereals and sugar beet growing area (Savran, Ananyiv, Balta, Kodyma, Kotovsk, Krasni Okny, Liubashivka districts); bovines breeding area with high sunflower and sugar beet productions (Velyka Mykhailivka, Berezhivka, Ivanivka, Mykolaivka, Rozdilna, Shyriayevem, and Frunzivka); dairy products, vegetables and chicken breeding area (Biliayivka, Kominternivske, Ovidiopol); cereals growing and bovines breeding area, with good development of grape growing and pig breeding sector (Bilhorod-Dnistrovskyi, Sarata, Tarutyne, Bolhrad, Izmail, Reni, Tatarbunary, Kiliya, Artsyz).

In 2013, from the total quantity of agricultural products, as percentage values, the vegetables growing represented 70.7%, while bovines breeding represented 29.3%.

The cross-border study in the Odessa region Ukraine showed that the cattle's breeding activity plays an important role in the agricultural context of the area. On January 1st 2014, we registered a complement of 31,667 thousands animals of which 12,364 thousands were cows [5].

The dairy cows breeding in the Odessa region is represented by the following breeds: Ukrainian red, Ukrainian black pied cow and red steppe. For the period between 2013 and 2014, in all types of farms, the total number of cattle's decreased by 2,058 animals or 6.11 %, and the number of cows decreased by 956 or 7.18 % (tab. 2).

Table 2 Cattle's complement, milk and meat production in the Odessa region

Years	Complement on January 1 st		Milk Thousands of tons	Meat Thousand s of tons	Average milk production per cow, kg
	Total	Of which cows			
2013	33.725	13.320	397.9	35.23	3.839
2014	31.667	12.364	401.9	32.20	3.577

The gross milk production was influenced by the total number of animals and by their productivity, increasing by 4 thousand tons. The average annual production per cow was of 3,577 kg in 2013, less by 262.0 kg in

comparison with 2012. The average production for the period between 2012 and 2013 was of 35.23 – 32.20 thousand tons.

The cattle's complement and milk production is presented in table 3.

Table 3 Cattle's complements and milk production in agricultural holdings

Farm	District Village	Cattle's complement (on January 1 st 2014)	Cows complement (on January 1 st 2014)	Milk production in t (2013)	Dairy-cow milk production (2013), kg	Milk sales, t (2013)
A/F Dnistrovskia, LLC	Artsyz Green House	1,225	375	1797	4,792	1,632
Possiia Yug, POE	Artsyz Kamyanske	451	196	3963	2,022	339
Starokozatsky Syr, LLC	Bilhorod-Dnistrovskiy Shabo	661	275	1129	6,450	1,083
Vilne Kozatsvo, APC	Bilhorod-Dnistrovskiy Starokozache	421	275	470	1,506	344
Mayak Agricultural Firm, LLC	Berezivka Zlatoustove	1,422	570	2,935	5,149	1,827
Osnova AF, LLC	Berezivka	310	150	208	1,387	184
Chornogirske, POE	Berezivka Chornogirske	1,393	400	1,680	4,199	1,428
Posmitny Breeding Plant	Berezivka Rozvit	534	231	1,235	5487	1,013
Nika Invest Agro, LLC	Bolhrad Banivka	207	124	532	7,147	532
Suvorov Experimental Production Farm	Bolhrad Oksamytna	287	150	602	4,012	555
Druzhma Narodiv, LLC	Velyka Mykhailivka Petrivske	582	180	585	3,248	484
Kolos, LLC	Velyka Mykhailivka Kipobe	429	110	412	3,743	365
Enikiy, APC	Kiliya Novoselivka	500	184	399	2,200	319
MRIYA, ALLC	Krasni Okny Novosamarka	696	257	898	3,494	812
Pravda, APC	Krasni Okny Malaivtsi	353	120	448	3,934	398
Stavrovsky, APC	Krasni Okny Stavrove	404	199	354	1,780	257
IVA, ALLC	Rozdilna Egorivka	695	285	1048	3,744	921
Niva, LLC	Savran Yosypivka	238	114	246	2,052	138
CP Pravda, LLC	Ivanivka zhugastrove	559	113	359,7	3,183	314.3
Agricultural Firm Petrodolynske, ALLC	Ovidiopol Petrodolynske	1531	600	2,775	4,625	2,556
Avangard-D, LLC	Ovidiopol Avangard	549	220	786	3,573	667
Trofimovka, LLC	Ovidiopol Molodizhne	323	174	779	4,482	
Druzhba, APC	Sarata Zarya	577	260	865	3,326	
Sergiivka, APC	Sarata Sergiivka	533	200	845	3,688	770
Pobeda, APC	Sarata Novoselivka	904	285	673	2,266	470
Rodina, APC	Sarata Plakhtivka	912	292	793	2,716	555
Myrny, OJSC	Sarata Minyailivka	214	103	257	1,763	175
Mayak, POAE	Shyriaieve Preobrazhenka	916	314	1,284	4,089	1184
Maryanivska Agricultural Firm, LLC	Shyriaieve Maryanivka	881	265	861	3,249	791
Novoandriivka Agricultural Firm, ALLC	Shyriaieve Novoandriivka	544	373	722	1935	657
ShVTs- 111	Shyriaieve Ordzhonikidze	333	150	241		216

From the 26 districts of the regions, only 12 register an increase of the cattle's complement, including dairy cows. We also notice that 90% of the quantity of milk produced in farms is sold and the rest of 10% represents the internal consumption.

In the region there is a reproduction base that offers agricultural companies and farms a complement of young replacement bovines. In the Odessa region there are regional and inter-regional (or multi-national) reproduction farms, respectively 82 breeding farms, of which 16 activate in plats growing and 66 zootechnical farms deal with animals breeding. Agricultural products changes and sales are also performed by the 10 agricultural trading companies, 77 food products trade markets, 351 marketing centers, 314 producer shops, 19 serving cooperatives, 15 credit unions.

As regards the caring of the animals belonging to citizens and farms of the region, there are 491 veterinary centers of which 36 offer a complete range of services, 338 diagnosis and therapy centers and 117 de consultancy centers. Moreover, there is a network of veterinary pharmacies (524 units) serving the farms' needs.

The main branch of the zootechnical sector in the Republic of Moldova is represented by bovines breeding, whose main target is milk and meat production, valuable food products for human alimentation, as well as raw material for the milk and meat industrial processing enterprises. Bovines breeding in the Republic of Moldova had the

highest development level in the period between 1989 and 1990, when they registered superior coefficients of bovines complement, productivity and global milk and meat production. The bovines complement for the period mentioned above constituted 1,061 pieces of which 395 thousands cows, with an annual milk production per cow of 4,015 kg, and a global milk production of 1,511.4 thousand tons. The highest milk production from each cow (7,000 kg) was obtained in the Mălăești Orhei farm. During the years to come, because of the failed agricultural reforms, we registered a decrease in all agricultural branches, including in the bovines breeding sector, in the percentage of this sector in the global agricultural product, in the economic coefficients of bovine milk and meat production.

During the last 6 years, starting from 2008, the total bovines complement decreased (from 230 to 191 thousand pieces) and this decrease constituted 17.7 % in comparison with 2008; in this period the cows complement decreased (from 168.8 to 134 thousand pieces) by 20.7%.

As regards the global milk production for the years 2008-2012, we can mention that from 2009, it begins to increase and in 2012, the increase represented 2.8 %.

The meat production decreased by 10.3% in 2012 compared to 2008. During this period, the milk production per cow increased from 3,011 to 3,380 kg or by 12.2% (tab. 4).

Table 4 Bovines complement, milk and meat production in the Republic of Moldova

Years	Pieces complement on January 1 st		Milk, thousands t	Meat, thousands t	Annual average production, cow milk, kg
	Total	Cows included			
2008	232.0	168.8	510.5	10.58	3.011
2009	218.0	160.3	538.9	12.0	3.316
2010	216.0	154.4	554.1	10.15	3.435
2011	216.0	154.2	525.77	9.67	3.224
2012	204.0	144.0	525.0	9.5	3.380
2013	191.0	134.0			

The dynamics of the bovines complement per categories of farms is presented in Table 5.

Table 5 Bovines complement per categories of farms

Years	2006	2007	2008	2009	2010	2011	2012	2013
Farms of all categories								
Bovines	311	299	232	218	222	216	204	191
Of which cows	217	207	169	160	161	154	144	134
Agricultural enterprises								
Bovines	20	19	15	13	12	11	11	10
Of which cows	8	7	6	5	5	4	4	4
Farms								
Bovines	0.4	0.4	0.5	0.4	1	1	1	1
Of which cows	0.2	0.3	0.2	0.2	0.5	0.4	0.4	0.5
Population houses								
Bovines	291	280	217	205	209	204	192	180
Of which cows	209	200	163	155	156	150	140	130

The bovines complement for all categories of farms continue to decrease. If on January 1st 2006 the total complement constituted 311 thousand pieces, including 217 thousand cows, then on January 1st 2013, respectively 191 and 134 thousand pieces or by 38.5 and 38.2 % less. The situation in agricultural enterprises is similar.

The decrease of the total bovines complement and cows constituted 50%.

In farms, starting from 2008, we can mention a trend to increase the bovines complement that on January 1st 2013 increased by 2.5 both as regards the total and cows complement.

In the population houses, which comprise most of the complement, it reduces every year from 291 thousands in 2006 to 180 thousands in 2013 or by 38.2%, including cows from 209 thousands to 130 thousands or by 37.8%.

The total bovines complement for the year 2012 was of 203.9 thousand pieces, while in 2013 – 191.2 thousand, less by 6.3%; the decrease also registered in case of cows complements, from 144.3 to 134.4 thousand pieces, by 6.9%. The complements decrease is smaller in comparison with the previous years, but it still keeps the descendent trend.

The complement's analysis at a territorial level proves that in 2013, in comparison with 2012, the decreases took place in all sectors, both as regards the total bovines and cows complement, with non-essential deviations between the administrative and areal sectors.

The analysis of the situation by regions proves that in 2013, in comparison with 2012, the total complement in the Northern Republic of Moldova decreased by 4.5 % and the cows complement decreased by 5 %. In the central area, the total complement decreased by 8.2 % and the cows complement decreased by 9.2 %. In the Southern area of the Republic, the total complement decreased by 10.2 %, and the cows complement decreased by 5.7 %, while in the Autonomous Territorial Unit of Gagauzia it decreased by 9.1, respectively 3.2 %. In the Northern area, where bovines breeding conditions are more benefic in comparison with other areas, the decrease of bovine complements is lower than in the central and Southern areas of the Republic.

According to the analysis from the cross-border area of the three countries, we can say that the dairy cows breeding system in farms of different sizes differs from one area to another and sometimes even in the same area, according to the fodders surfaces (especially fields) and the possibility to provide fodder resources, labor force, technical and material endowments, with mechanization installations and machines of the biological material used in exploitation (cows race) and, last but not least, the modality of production capitalization or even of the existing traditions.

As regards the bovines wellbeing, which also determines the production level and quality, there are five fundamental liberties that must be provided: the liberty of comfort

– animals must enjoy a proper life environment, which must also include a shelter and a comfortable resting area; the liberty to express their natural behavior – animals must have enough space and other animals company; the liberty for hunger and thirst – animals must have unlimited access to fresh water and proper food to maintain its health condition; the liberty towards fear and stress – animals must be treated in a way that do not psychically harm them; the liberty towards pain and illness – animals must be provided with a fast and proper treatment.

CONCLUSIONS

1. In the cross-border Romanian area dairy cows exploitations are subject of continuous modelling according to the cattle's complements and their destination, as well as to specific fodder sources, needed fodders quantity, calculated according to the fodders ratios specific to dairy cows, practiced maintenance system, etc.

2. The following types of micro-farms can be found in the cross-border Romanian area: *micro-farms deriving from the total or partial use of biological matter* and investments resulting from the liquidation of the ex-cooperative structures, but with no fodder base and with lots of improvisations; *multi-active micro-farms* with traditions in dairy cows breeding, which use simple constructions, made of local materials, to shelter animals, family labor force and private fodder resources from various parcels situated at different distances from the micro-farm headquarters and of scarce road infrastructure; simple technical endowments, with milk selling partially at the market, most of it being meant to internal consumption; *micro-farms exploiting dairy cows during summer time in the so-called "cow shelters" organized by the local councils or by certain owners that become partners or by association of the owners with those who only perform milk processing activities in small processing units; micro-farms with milk purchase and dairy processing activities or fresh fermented products with direct selling on the market or in different collectivities based on specific agreements.*

3. Among the 26 districts of the Odessa region, Ukraine, the number of cattle's registered a slight increase in only 12 districts, with a decreasing number at the level of the total cross-border area.

4. In the Odessa region there are regional and inter-regional (or multi-national) reproduction farms, respectively 82 breeding farms, of which 16 activate in plats growing and 66 zootechnical farms deal with animals breeding. Agricultural products changes and sales are also performed by the 10 agricultural trading companies, 77 food products trade markets, 351 marketing centers, 314 producer shops, 19 serving cooperatives, 15 credit unions.

5. In the Republic of Moldova, the number of bovines for all categories of farms decreased. If on January 1st 2006 the total number represented 311 thousand pieces, including 217 thousand cows, on January 1st 2013 there were 191 thousand, respectively 134 thousand pieces or 38.5 respectively 38.2 % less. The situation in the agricultural enterprises is similar. The reduction of the total number of bovines, as well as of the total number of cows represented 50%. Starting with 2008, when referring to farms, we can mention an increasing trend of the complement of bovines, increased by 2.5 times on January 1st 2013 both for the total number, as well as for the number of cows. As regards the population's farms, which comprise most of the complement, this decreases from year to year, from 291 thousands in 2006 to 180 thousands in 2013 or by 38.2%, including cows, from 209 thousands to 130 thousands or by 37.8%.

6. The bovines' wellbeing finally determines the productions level and quality, which means we must provide the animals with the five fundamental liberties: liberty towards discomfort, liberty to express their natural behavior; liberty towards hunger and thirst; liberty towards fear and stress and liberty towards pain and illness.

7. We acknowledge that both in the Romanian and Ukraine and Republic of Moldova cross-border areas, in the great or family-type farms we analyzed, the assignment of factors of production is under the needed values, as the current conditions,

especially the financial ones, only allow the use of certain factors of production (race, fodders). If in Romania European financing contributed to the performances improvement, in Ukraine and Republic of Moldova farmers still face great deficiencies.

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