

## CONTRIBUTIONS ON THE STUDY OF THE CATTLE HUSBANDRY WITHIN THE CONDITIONS PROVIDED BY THE MOUNTAIN AREA IN NORTHERN ROMANIA

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### Abstract

*In Romania, approximately 32.7% of the country is classified as LFA (disadvantaged areas). This territory is represented mainly by the mountain areas. The study was made at the "Timineanca" Breeders Association from Suceava, which has a total of 508 members and 2386 cattle. The primary data was taken from the OARZ Suceava and filled with comments from the field. The purpose was to reveal the features regarding the property areas owned by the members of the association, herds in COP, the technical equipment of the association members, the level of animal production and possibilities for making the area. The area of land allocated to members of the association is 2825.62 hectares represented by: 1211.75 ha grassland and 1623.87 ha hayfield. Hence, it is clearly seen that the main occupation of the members is animal husbandry. The minimum land area owned by a member of the association is 0.90 ha respectively 0.031% and the maximum 39.38% ,1.39 ha respectively. Average yield of milk per total lactation for the animals included in the COP was 4627 kg with 4.3% and 204.1 kg fat and protein, 3.39% and 157.6 kilograms. On normal lactation this production was 3860 kg with 4.2% and 159.6 kg fat and protein, 3.37% and 128.8 kilograms. The number of cattle included in C.O.P. is only 9.05% respectively 216. At the association, on total, the average milk per normal lactation was less than 2175 kg and at standard equivalent of 3.5% fat, production is 2548 kg milk.*

**Key words:** mountain areas, members of association, occupation, animal breeding, milk

### MATERIAL AND METHOD

The research was made in mountain areas, on a 2386 cattle from „Timineanca” Association in Suceava, northern Romania. According to art. 37 and 50 from European Council Code (CE) no 1698/2005 and art 1 from Government Decision no 949/2002: „*Mountain areas include those areas characterized by very limited possibilities of using the land and by increasing costs in any thremmatology work.*”

The primary data was taken from the files of „Timineanca” Association and from The Bureau of Improvement of Reproduction in Animal Husbandry (O.A.R.Z.) Suceava and correlated with the observations on the field. Once systemized, the data was processed and interpreted by using specific methods for this kind of research (arithmetic mean, average error, standard deviation, variability coefficient, Fisher and Tukey tests, and others) using the statistics program, the

analysis of variation and co-variation (S.A.V.C.) proposed by V. Maciuc in 2002-2003 at U.S.A.M.V. Iasi Ro.

There are some important ways for improving the milk and meat production for profit; among these we mention: the optimization of genetic potential and productivity of cattle, together with that of exploitation technologies in small and middle family farms and a better management administration.

### RESULTS AND DISCUSSIONS

The hillside area of Suceava includes Vatra Dornei and Cîmpulung Moldovenesc basins which extends to Gura Humorului and Rădăuți toward west. This area include a large mountain area with steepy terrains with valleys, high hills and especially mountains, ranging from 400 to 1850 m in altitude.

The main occupation of most people from Bucovinian villages is animal breeding, especially catles. This development was facilitated by both natural and socio-economical characteristics of this area.

The existence of pastures and haylands, the necessity of using animal products, the local people skills in animal breeding as well as the development of lactate industry in centers as Vatra Dornei and Câmpulung Moldovenesc are the determinant factors for development of cattle breeding in this area [1, 4, 5, 6].

Now, Suceava is the most numerous in terms of cattles, over 180,000, out of which 100,000 female. Also, here is 10% of the total milk product of the whole country, which shows the importance of this occupation, respectively the cattle breeding for milk for the benefit of the families.

The companies that collect and process the milk are spread all over the county; daily they collect over 400,000 l of milk. The producers deliver the milk to the closest companies which also offer the best price, payment options and the food for the animals.

Cow breeders selected those animals that produce 10-12 l daily in average based only on the main forage, respectively hay during colder seasons and pasture in the warm season. Traditionally, in the mountain areas, almost each family has at least one cow, but

the figure can go up to 20, when the breeders own larger pastures. In the situation of 1-3 cows (which is mostly the case), 30% from milk production is for household consumption and 70% for selling to the processing companies in the area [1, 2, 3, 6].

There is a network of collecting milk in every place even before 1990, but the biggest quantity of milk from the mountain area of Bucovina is collected by S.C. „Dorna Lactate”.

In the last years the new processing technologies, the new players on the milk processing market as well as the necessity of aligning the quality of the products to the european standards reflected in the restriction for the reception of the milk and also in the price of that milk.

Quality speaking, cow milk needs to have a standard fat percentage of 3.5%, proteine 3.2 %, minimal density 1,027, acidity 14-16°T, and the temperature should not exceed 4°C and the degree of impurification should fall within the permitted limits. Milk acidity is expressed in pH that shows the contraction of hydrongen ions in milk. The pH- of cow milk should be within 6.7-6.4. The freezing point is -0.555°C and the very constanstant characteristic of milk [2, 3, 6]. The indicators refering to the bacterial and biogical level are shown in table 1.

Table 1  
 Milk quality in European Union referring to the content in somatic cells, total numbers of germs and butyric spores

Specificity	Present situation	Objectives
NCS/ml	< 400000	< 250000
NTE/ml	< 100000	< 50000
Butyric spores /ml	< 1000	< 1000

The association's goal is to mobilize the forces and the initiatives of the particular producers, specialists, companies to help and develop economic, social and cultural activities. Thus, the focus is on the improving the economic situation of the area, households, through the technical and scientific progress in the mountain agriculture, the development of agrarian turism, traditional crafts, diversification of activities, national and local investment in order to ensure a good competitivity

compared to that in EU.

The patrimony of „Timineanca” Association is made up by: the contribution of the founding members and fees. Now, the association had 508 members and 2386 cattles (Table 2). The land attributed to the members of the association is 2825.62 ha of which: 1211.75 ha pasture and 1623.87 ha hayland. Hence, one can see that the main occupation of the members is animal breeding which needs to be capitalized in this area, both technologically and genetically.

Table 2  
 Total members Timineanca Association and the land in the agricol registry that belong to those

Specification	Members	Cattles	Land		Pastures + layland
			Pastures / ha	Hayland / ha	
Total	508	2386	1211.75	1613.87	2825.62

In table 3 one can see that the minimal surface of land owned by a member of the association is 0.9 ha and respectively 0.031% and the maximum one is 39.38 ha respectively 1.39 %. Thus, only in the

association, combining the basic occupation with other activities such as agrarian turism and if subsidized, the exploits from this area can be efficient and competitive at UE level.

Table 3  
 Minimal and maximum of land surface owned by association members

Specification	Minimum	Maximum
Surface (ha)	0.90	39.38

Out of total of cattle registered at association only 9.05%, 216 cattle respectively appear in the database of Official Control of Productivity (C.O.P.) and enjoy grants from the government (Table 4).

On of the association priorities is to encourage the breeders to register the cattles at C.O.P.; only this way the number of animals could be improved as well as the capitalization of the exploitations.

Table 4  
 The total number of members and cattles registered at C.O.P.

Specificare	Members	Cattles
Total	31	216

The average production of milk per total lactation of the catteded registered at C.O.P. was 4627 Kg with 4.3 % and 204.1 Kg fat, protein 3.39 % and 157.6 Kg. Per normal lactation this production was 3860 Kg with 4.2 % and 159,6 Kg fat, protein 3.37 % and 128.8 Kg. Like we have already mentioned this represents only 9,05 %. On association level, in total, the average production per

normal lactation was much less 2175 Kg, and the standard equivalent with 3.5 % fat, the production is 2548 Kg milk. In order to estimate the milk production per normal lactation, the method of multiple control was used, with a control of 60 days. The daily average production of milk and the average of animals owned by a breeder in shown in table 5.

Table 5  
 Daily average milk production and animal number

Feature	$\bar{X}$	$\pm s_x$	S	V%	Min.	Max.
Milk Kg/day	8.70	0.159	2.178	25	5.00	12.00
Animals /cattle	1.93	0.104	1.369	74	1	20

One can see that the minimum number of animals owned by a breeder is one and the maximum is 20, the average 1.94 with an extreme variety of 74%. We mention, that most

breeders own only one cow, this is true for 54.37 % of the members, followed by those who own two cattles with 19.35%, 3 cattles 8.6% and other categories as shown in Table 6.

Table 6  
 Size of exploitation

No of animals in exploitation	1 cap.	2. cap.	3 cap.	4 cap.	5 cap.	6 cap.	7 cap.	8 cap.	>10 Cap.
% from the total number	55.37	19.35	8.60	5.36	1.10	2.15	1.10	1.61	5.36

Table 7  
 Agrarian machines owned by association members

N <sup>o</sup>	Machines	Total number	% from total number
1	Tractors	9	1.77
2	Mows	133	26.10
3	Cooling tanker	5	0.98
4	Milkers	72	14.17
5	Electric generator	18	3.54
6	Fodder chopper	10	1.96

The private property in the sphere of animal breeding existed even before 1989 in mountain areas, but the conditions and financial resources were lacking so that the micro families farms could not develop and modernize. After revolution, the access to the technology and information was free, but limited for the Romanian farmer, who lacked financial resources. This is the reason that even at the association level the technology was still lacking just as shown in Table 7 and Figure 1.

Because this area is mostly pasture and with cattle, the mows (26.1%) and milkers (14.17%) have preponderancy but not enough for all the members, and under the present requirements of UE for the quality standards for the milk products.

Beside new shelters and reconditioning the old ones, animal breeding by individuals requires the improving of the comfort and hygienic conditions and efficient technologies so that the production could be obtain under condition of economic quality and efficiency.

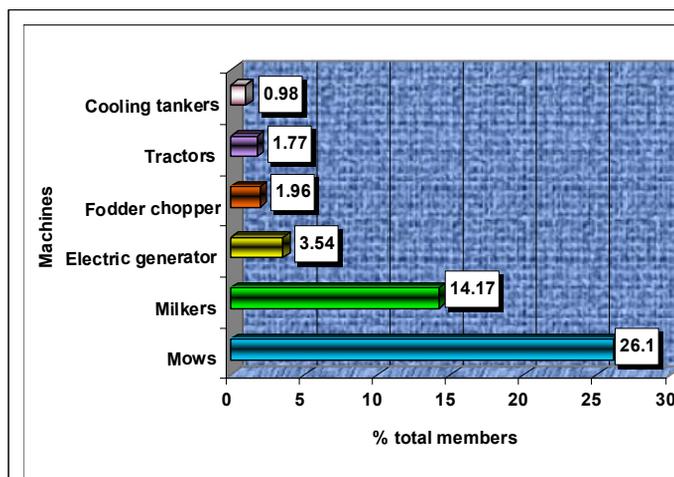


Figure 1 Machines in association

Most households have 1-2 cows and only 0.3% have 5 cows per household [2, 3, 5, 6]. Through the small quantities of milk obtained, these farms cannot assure more

then family consumption. With small quantities of milk for market or processing, and many times it does not match the quality

required, the familial micro-farms cannot assure profit so they are not viable.

It is necessary to be taken into account and counted the main technical and economic factors which influence the profit both in reconsidering the size of the big complex for breeding and exploitation of the milking cows and in establishing new familial micro-farms. The combining of milking cow breeding with

the agrarian tourism can generate profit, which would contribute to the raising of the living level of rural population and the possibility to restart the cycle of production at a superior level. For this, we present a model of agricultural exploitation in Suceava area (Table 8 and Figure 2) profitable from economic point of view [1].

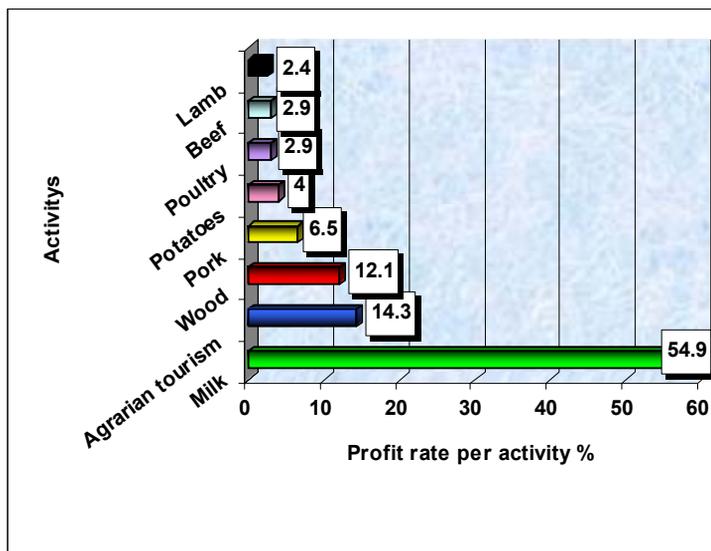


Figure 2 Profit rate per activity

Agricultural area is 15.7 ha of which: 15.2 natural pastures, 0.5 plough land, 1.3 ha forests. Animals per categories: 15 cattle of which 11 milking cows, 4 pigs, 14 sheep, 30 poultry (paid labor+transportation+wood). The production

obtained on the natural pastures is completely used in household, and its value (913 EURO = paid labor) was distributed on the spendings with cattle and ovine.

Tabelul 8  
 Rezultatele economice ale unei gospodării agricole din zona colinar montană a Sucevei

Specification	Yearly total income		Total spending/year		Yearly Profit		Profit rate	
	EURO	%	EURO	%	EURO	%	EURO	
Total	6.796.00	100.00	3,887.00	100.00	2,908.00	100.00	74.80	
Milk	3,057.00	41.00	1,461.00	37.60	1,596.00	54.90	109.20	
Beef	522.00	7.70	438.00	11.30	84.00	2.90	19.30	
Pork	640.00	9.40	450.00	11.50	189.00	6.50	42.00	
Lamb	245.00	3.60	176.00	4.50	70.00	2.40	39.60	
Poultry	212.00	3.10	128.00	3.30	84.00	2.90	66.10	
Potatoes	236.00	3.50	120.00	3.10	116.00	4.00	97.10	
Wood	1,268.00	22.70	914.00	23.50	353.00	12.10	38.70	
Agrarian tourism	616.00	9.00	201.00	5.20	415.00	14.30	206.80	

The profit is an economic indicator characterized by the value resulted from the subtraction of the commercial cost ( $C_c$ ) from the price of valorification ( $P_v$ ) and profit is obtained when the production is valorified in the exchange process.

$P_t = Q_m ( P_v - C_c )$  where:

$P_t$  – total profit

$Q_m$  – production

Thus, the profit is determined by the amount and the quality of the good in the total production and the volume of production spendings.

The profit rate is an indicator which characterized the relative value of rentability. The data in Table 8 and Figure 2 show a good level of rentability for the agricol exploitation under analysis, respectively 74.8 Euro in the condition in which it develops more activities and has the dimension fit for an agricol exploitation in UE.

## CONCLUSION

According to the study several conclusions could be pointed out

The basic occupation of the association members is animal breeding need to be capitalized in this area, both from the point of view technological and the genetic potential of animals.

The average production of milk on normal lactation for the cattle in C.O.P. was 3860 Kg with 4.2 % and 159.6 Kg fat respectively 3.37 % and 128.8 Kg proteine, superior of the animals not included in C.O.P. respectively 2.175 Kg of milk.

Most animal breeder won only one cattle, with a percentage of 55.37%, followed by those who own 2 cattle 19.35%, 3 cattle 8.60% and others, and more than 4 cattle

16.68%. Also, being a pasture and mostly with cattle, the mows (26.1%) and the milkers (14.17 %) are most among the others machines but still insufficient for the standards of quality required by UE for the milk products.

The economic valorification of production potential of miking cows in the modern condition of exploitation impose the correlation with: exploitation conditions, ecological particularities of exploitation, technological particularities used, animals, natural and artificial environment in which they are exploited.

The correlation of milking cows with agrarian tourism can generate profit, which contributes to the raising of the living standard for the rural population and the possibility of retaking the production cycle at a superior level.

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