RESEARCHES REGARDING THE CATTLE AND SHEEP LIVESTOCK IN THE NEARCITY AREA OF IASI TO ENSURE THE OPTIMUM MILK AND DIARY CONSUMPTION

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Abstract

The present paper consists in the presentation, analysis and interpretation of data on cattle and sheep herds for milk and the existing fodder base in the nearcity area of Iaşi.After analyzing the data we have seen the exact situation on each village to ensure optimum consumption of milk and dairy products.
The study was conducted in the nearcitycity area of Iaşi, which has 15 villages: Bîrnova, Ciurea, Miroslava, Holboca, Leţcani, Tomeşti, Victoria, Popricani, Aroneanu, Bosia, Golăieşti, Comarnic, Prisecani, Costuleni and Rediu.
Of the 15 common, only in Bîrnova, Bosia, Golăieşti, Leţcani, Popricani, Prisecani, Rediu and Victoria villages, the yields obtained can provide the optimal level of consumption for milk and dairy products for the local population.
In villages Tomeşti and Ciurea the productions can not cover the optimal consumption needs for milk and dairy products, but also the existing forage base is not sufficient to increase the number of cattle and sheep for milk.
Villages as Comarna, Costuleni, Miroslava and Holboca can not provide the optimal consumption, even if their forage base could ensure the growth of larger herds of cattle and sheep for milk, in order to obtain higher production.

Key words: milk, consumption, dairy, cattle, sheep

The animal husbandry contributes to the development of the whole sector of agriculture, increased labor productivity and economic efficiency, having both direct and indirect contribution to the agricultural economy.

Milk is the first food that human comes into from the first day of life. It is an indinspensabil food for life and valuable from a nutritional point.

Cattle and sheep, are species that efficiently exploit the forage from the natural grassland (representing 21.1 % of global agricultural area) can be considered as major factors contributing to the management of the countryside and landscape protection.

Fundamental physiological characteristics of digestion in cattle and sheep feeds allow them to turn the fodder ingested in higher animal products (milk, meat) food not competing with man, pigs, poultry.

The study was conducted in the nearcity area of Iaş, including 15 villages: Bîrnova, Ciurea, Miroslava, Holboca, Leţcani, Tomeşti, Victoria, Popricani, Aroneanu, Bosia, Golăieşti, Comarna, Prisecani, Costuleni and Rediu.

MATHERIAL AND METHOD

The study was conducted in the nearcity area of Iaş, including 15 villages: Bîrnova, Ciurea, Miroslava, Holboca, Leţcani, Tomeşti, Victoria, Popricani, Aroneanu, Bosia, Golăieşti, Comarna, Prisecani, Costuleni and Rediu *(fig. 1)*.

Figure 1 **The location of the nearcity area of Iaşi**

RESULTS AND DISCUSSIONS

The professional literature indicates that, to maintain human health, should be required to annually consume 300 liters per capita (after WHO). Considering the amount of recommended consumption, we will analyze the existing situation in the nearcity area of Iaşi. Regarding the nearcity area of Iaşi., the population situation, on villages is as follows (*tab. 1*):

Table 1

The nearcity area of Iaşi population on the 31st of Dec. 2006

No. crt.	Village	Total population
1.	Aroneanu	2870
2.	Bîrnova	4098
3.	Bosia	1970
4.	Ciurea	10248
5.	Comarna	4586
6.	Costuleni	4894
7.	Golăieşti	3987
8.	Holboca	12204
9.	Leţcani	6576
10.	Miroslava	8191
11.	Popricani	7113
12.	Prisecani	3579
13.	Rediu	3710
14.	Tomeşti	12096
15.	Victoria	4383
16.	TOTAL	91001

Source: DJS Iaşi

In Aroneanu village, in 2006, the În comuna Aroneanu, în anul 2006, the crop situation is as follows (*tab. 2*):

Table 2

Calculation of total U.N. in 2006, the Aroneanu village

No. crt.	Crop	Production (to)	NU/kg	Total NU
1.	Alfaalfa	250	0.49	122500
2.	Other perrenials	80	0.48	38400
3.	Anuals	360	1.17	421200
4.	Pastures	2152	0.20	430400
5.	Hays	5070	0.50	2535000
6.	TOTAL			3547500

The requirement for milk production is shown in *table 3*:

Table 3

The requirement for milk production

Average milk production (l)	6 - 8	10 -12	14-16	18 -20
Necessary NU	1.16	0.91	0.81	0.75

In order to find the necessary NU to produce 1 l of milk we devide the average production to the average days of lactation (305 days). In Aroneanu village, the average milk yield of cows and sheep is 2960 l/head + 47 l/head = 3007 l/head.

3007 : 305 = 9.8 l, so 0.91 UN is needed therefore to produce a liter of milk of 3.8 to 4% fat.

For an optimal consumption of 300 liters per capita per year, in Aroneanu village, the needs of milk would be 300 l· 2870 pers. = 8610 hl. With a total milk production of cows and sheep up to 11419 hl, the optimal consumption is covered, resulting in a surplus that can be capitalized on the open market. To cover the optimal consumption of 300 liters per person, would require 300 l · 0.91 = 2173 NU.

The entire population of the village would need 273 · 2870 = 783 510 NU. Comparing with the situation (3547500 NU) we can establish a good endowment of the village land planted with fodder crops, pasture and meadow, which can provide feed so as to achieve an optimal consumption.

In Bîrnova village, in 2006, the crop situation is as follows (*tab. 4*):

Table 4

Calculation of total U.N. in 2006, the Bîrnova village

No.	Crop	Production (to)	NU/kg	Total NU
1.	Alfaalfa	1320	0.49	646800
2.	Other perrenials	420	0.48	201600
3.	Anuals	585	1.17	684450
4.	Fodder beet	832	0.12	99840
5.	Pumpkins	902	0.13	117260
6.	Pastures	2098	0.20	419600
7.	Hays	1200	0.50	600000
8.	TOTAL			2769550

In Birnova village, the average milk yield of cows and sheep is 3267 l/head. 3267: 305 = 10.7 l therefore 0.91 NU is required to produce one liter of milk 3.8 to 4% fat.

For an optimal consumption of 300 liters per capita per year, in Birnova, necessary for milk reached a value of 300 l·4098 pers.=12 294 hl. Total milk production of cows and sheep being 13.563 hl we can say that this optimal level of production covers the needs of consumption of milk and dairy for the village.

To cover the optimal consumption of milk and dairy products of 300 l/person, 0.91 NU·300 l= 273 NU would require. For the entire population of the village would need 273 · 4098 = 1118754 NU, so we can find a surplus of NU in Birnova village.

In Bosia village, in 2006, the crop situation is as follows (*tab. 5*):

Table 5

Calculation of total U.N. in 2006, the Bosia village

No. crt.	Crop	Production (to)	NU/kg	Total NU
1.	Alfaalfa	2500	0.49	1225000
2.	Anuals	400	1.17	468000
3.	Corn silage	250	0.20	50000
4.	Fodder beet	800	0.12	96000
5.	Pumpkins	1200	0.13	156000
6.	Pastures	10690	0.20	2138000
7.	Hays	3500	0.50	1750000
8.	TOTAL			5883000

For an optimal consumption of 300 liters per capita per year, the village Bosia, needs 300 l ·

1970 pers. = 5910 hl of milk and 273 · 1970 = 537810 NU. The total production is 20891 hl, we can say that this possibility is covered and that there is an extra production of NU.

In Ciurea village, in 2006, the crop situation is as follows (*tab. 6*):

Table 6

Calculation of total U.N. in 2006, the Ciurea village

No. crt.	Crop	Production (to)	NU/kg	Total NU
1.	Alfaalfa	1340	0.49	656600
2.	Other perrenials	56	0.48	26880
3.	Anuals	365	1.17	427050
4.	Fodder beet	1344	0.12	161280
5.	Pumpkins	875	0.13	113750
6.	Pastures	1900	0.20	380000
7.	Hays	1556	0.50	778000
8.	TOTAL			2543560

To ensure the optimal consumption of 300 l/capita/year, in Ciurea village, the necessary milk production wold be 300 l · 10248 pers. = 30744 hl. With a total production of 20386 hl, it is clearly that this value can not be reached, instead, there is a deficit of 10358 hl. The needed NU woul be 0.91 ·300 l = 273 NU and for the whole population of the village 273·10248=2797704 NU, so the village forrage base is insufficient.

In Comarna village, in 2006, the crop situation is as follows (*tab.7*):

Table 7

Calculation of total U.N. in 2006, the Comarna village

No. crt.	Crop	Production (to)	NU/kg	Total NU
1.	Alfaalfa	1640	0.49	803600
2.	Other perrenials	1400	0.48	672000
3.	Clover	210	0.52	109200
4.	Corn silage	700	0.20	140000
5.	Fodder beet	1050	0.12	126000
6.	Pastures	5790	0.20	1158000
7.	Hays	1528	0.50	764000
8.	TOTAL			3772800

În Comarna village, the necessary milk production in order to ensure the optimal consumption woul be 300 l ·4586 pers. = 13758 hl. The obtained production can not sustain an optimal consumption for milk and diary products. There will also be needed a total of 0.91 ·300 l = 273 NU, and for the entire population, the necessary woul be 273 · 4586 = 1251978 NU. Comparing to the existant situation (3772800 NU) we notice an extra production of NU in this village.

In Costuleni village, in 2006, the crop situation is as follows (*tab. 8*).

În Comarna village, the necessary milk production in order to ensure the optimal consumption woul be 300 l ·4894 pers.= 14682 hl. With a total production of 11198 it is noticed that the optimal consumption can not be reached. The deficit is 3484 hl.

Table 8

Calculation of total U.N. in 2006, the Costuleni village

No. crt.	Crop	Production (to)	NU/kg	Total NU
1.	Alfaalfa	1500	0.49	735000
2.	Fodder beet	1500	0.12	180000
3.	Pumpkins	1000	0.13	130000
4.	Pastures	5790	0.20	1158000
5.	Hays	1528	0.50	764000
6.	TOTAL			2967000

In order to achieve the optimal consumption it would be needed 0.91 ·300 l = 273 UN. For the entire population of the village this would be 273·4894=1336062 NU. Comparing to the existant situation (2967000 NU) it is noticed an extra production for Costuleni.

In Golăieşti village, in 2006, the crop situation is as follows (*tab. 9*):

Table 9

Calculation of total U.N. in 2006, the Golăieşti village

No. crt.	Crop	Production (to)	NU/kg	Total NU
1.	Alfaalfa	2800	0.49	1372000
2.	Anuals	450	0.17	76500
3.	Corn silage	300	0.20	60000
4.	Fodder beet	400	0.12	48000
5.	Pumpkins	1750	0.13	227500
6.	Pastures	9000	0.20	1800000
7.	Hays	1530	0.50	765000
8.	TOTAL			4349000

In Golăieşti village, the optimal consumption of 300 l/capita/year, it is ensured by a production of 300 l· 3986 pers.= 11958 hl. The total milk production of the village (24604 hl) can sustain the optimal reccomanded consumption for milk. There will be also needed a total of 0.91 · 300 l=273 NU. For the entire population this woulb be 273 · 3986 = 1008178 NU. The forrage base of the village amounted 4349000 NU, it can be declared that this can sustain the optimal milk and diary consumption for the local population.

In Holboca village, in 2006, the crop situation is as follows (*tab. 10*):

Table 10

Calculation of total U.N. in 2006, the Holboca village

No. crt.	Crop	Production (to)	NU/kg	Total NU
1.	Alfaalfa	5002	0.49	2450980
2.	Anuals	1149	0.17	195330
3.	Corn silage	8000	0.20	1600000
4.	Fodder beet	400	0.12	48000
5.	Pumpkins	400	0.13	52000
6.	Pastures	3245	0.20	649000
7.	Hays	974	0.50	487000
8.	TOTAL	5482310		

In Holboca village, to ensure the optimal consumption of 300 l/pers./year, it would be needed 300 l · 12204 pers. = 36612 hl. The total

milk production is 20853 hl so it is noticed that this can not cover the optimal milk and diary consumption for the local population. In order to cover the optimal milk production of 300 l/capita/year, it would be needed 0.91·300 l=273 NU. For the entire population, the necessary woul be 273 · 12204 = 3331692 NU. Comparing to the existent situation (5482310 NU) it can be noticed that the surfaces occupied with fodder crops creates extra NU production for Holboca village.

In Leţcani village, in 2006, the crop situation is as follows (*tab. 11*):

Table 11

Calculation of total U.N. in 2006, the Leţcani village

No. crt.	Crop	Production (to)	NU/kg	Total NU
1.	Alfaalfa	2293	0.49	1123570
2.	Anuals	300	0.17	51000
3.	Fodder beet	250	0.12	30000
4.	Pumpkins	400	0.13	48000
5.	Pastures	14232	0.20	2846400
6.	Hays	5990	0.50	2995000
7.	TOTAL			7093970

To ensure the optimal milk and diary production of 300 l/capita/year, in Leţcani village, it would be needed a total milk production of 300 l ·6576 pers. = 19728 hl. The total milk production obtained in the village can ensure the optimal consumption for the local population.

To cover this needs, there will be also needed 0.91·300l=273 NU. For the entire population this means 273·6576 = 1795248 NU. Comparing to the actual situation (7093970 NU) it can be noticed that there is an extra production of fodder crops in Leţcani village.

In Miroslava village, in 2006, the crop situation is as follows (*tab. 12*):

Table 12

Calculation of total U.N. in 2006, the Miroslava village

No. crt.	Crop	Production (to)	NU/kg	Total NU
1.	Alfaalfa	3040	0.49	1489600
2.	Anuals	180	0.17	30600
3.	Pastures	22475	0.20	4495000
4.	Hays	5555	0.50	2277500
5.	TOTAL			8292700

In Miroslava village the optimal reccomended milk consumption it is covered if in the area we would obtain 300 l · 8191 pers. = 24573 hl. With a total prodoction of 21527 hl, it is obvios that the optimal milk consumption can not be reached for the local population, with the actual livestock. The production deficit is 3046 hl.

It would also be needed 0.91 ·300 l = 273 NU. For the entire population, the necessary woul be 273·8191=2236143 NU. Comparing to the actual situation (8292700 NU) it can be established that the surfaces cultivated with fodder crops creates an extra production for Miroslava village.

In Popricani village, in 2006, the crop situation is as follows (*tab. 13*):

Table 13

Calculation of total U.N. in 2006, the Popricani village

No. crt.	Crop	Production (to)	NU/kg	Total NU
1.	Alfaalfa	900	0.49	441000
2.	Other perrenials	200	0.48	96000
3.	Anuals	2000	0.17	340000
4.	Fodder beet	200	0.12	24000
5.	Pumpkins	510	0.13	66300
6.	Pastures	14920	0.20	2984000
7.	Hays	9420	0.50	4710000
8.	TOTAL			8661300

In Popricani village the optimal reccomended milk consumption it is covered if in the area we would obtain 300 l · 7113 pers. = 21339 hl. Popricani village makes a total production of 30866 hl. This production can ensure the optimal milk and diary consumption for the local population.

To ensure the optimal consumption it would be needed 0.91 · 300 l = 273 NU. For the entire population of the village, this would mean 273 · 7113 = 1941849 NU. Comparing to the actual situation (8661300 NU) it can be observed that the surfaces cultivated with fodder crops creates an extra production for Popricani village and can sustain the ensurance of this optimum.

In Prisecani village, in 2006, the crop situation is as follows (*tab. 14*):

Table14

Calculation of total U.N. in 2006, the Prisecani village

No. crt.	Crop	Production (to)	NU/kg	Total NU
1.	Alfaalfa	405	0.49	198450
2.	Other perrenials	60	0.48	28800
3.	Anuals	420	0.17	71400
4.	Fodder beet	75	0.12	9000
5.	Pumpkins	70	0.13	9100
6.	Pastures	2103	0.20	420600
7.	Hays	1728	0.50	864000
8.	TOTAL			1601350

To ensure the optimal milk and diary production of 300 l/capita/year, in Prisecani village, it would be needed a total milk production of 300l·3579 pers.=10737 hl. Prisecani village obtains a total milk production of 19716 hl and it can cover with no problems the necessary for the optimal reccomended milk consumption. Regardin the NU contains of the fodder crops, to ensure the optimal milk consumption, it would be needed 0.91 ·300 l = 273 NU. For the entire population, the necessary would be 273·3579 = 967067 NU. Comparing to the existant situation (1601350 NU) it can be noticed once again that the surfaces cultivated with fodder crops creates an extra

production for Prisecani village and can sustain the ensurance of this optimum.

In Rediu village, in 2006, the crop situation is as follows (*tab. 15*):

Table 15

Calculation of total U.N. in 2006, the Rediu village

No. crt.	Crop	Production (to)	NU/kg	Total NU
1.	Alfaalfa	2150	0.49	1053500
2.	Anuals	100	0.17	17000
3.	Fodder beet	400	0.12	48000
4.	Pumpkins	250	0.13	32500
5.	Pastures	1.500	0.20	300000
6.	Hays	500	0.50	250000
7.	TOTAL			1701000

To ensure the optimal milk and diary production of 300 l/capita/year, in Rediu village, it would be needed a total milk production of 300 l · 3710 pers. = 11130 hl.

As the total milk production obtain is 14351 hl, it can be declared that this is superior to ensuring the optimal consumption for the local population.

In order to cover the optimal cossumption of 300 l/capita, it would be needed 0.91·300 l = 273 NU. For the entire population, the necessary would be 273 · 3710 = 1012830 NU. Comparing to the existant situation (1701000 NU) it can be noticed once again that the surfaces cultivated with fodder crops creates an extra production for Rediu village and can sustain the ensurance of this optimum.

In Tomeşti village, in 2006, the crop situation is as follows (*tab. 16*):

Table 16

Calculation of total U.N. in 2006, the Tomeşti village

No. crt.	Crop	Production (to)	NU/kg	Total NU
1.	Alfaalfa	1500	0.49	735000
2.	Other perrenials	666	0.48	319680
3.	Anuals	1500	0.17	255000
4.	Fodder beet	280	0.12	33600
5.	Pumpkins	75	0.13	9750
6.	Pastures	5000	0.20	1000000
7.	Hays	270	0.50	135000
8.	TOTAL			2488030

In Tomeşti village, the necessary for milk in order to ensure the optimal milk consumption of 300 l/capita/year, would be 300 l · 12096 pers. = 36288 hl. The total milk production realized in the area (13010 hl) cannot cover the optimum milk consumption, with a high level of the deficit (23278 hl).

In this case, the necessary NU would be 273 · 12096 = 3302208 NU. The village achieves only 2488030 NU, wich is insufficient to develop the local livestock.

In Victoria village, in 2006, the crop situation is as follows (*tab. 17*):

Table 17

Calculation of total U.N. in 2006, the Victoria village

No. crt.	Crop	Production (to)	NU/kg	Total NU
1.	Alfaalfa	600	0.49	294000
2.	Anuals	1900	0.17	323000
3.	Fodder beet	200	0.12	24000
4.	Pastures	8184	0.20	1636800
5.	Hays	2115	0.50	1057500
6.	TOTAL			3335300

In Victoria village, the necessary for milk in order to ensure the optimal milk consumption of 300 l/capita/year, would be 300 l · 4383 pers. = 13149 hl. In this case, the total milk production, (23689 hl), can ensure the optimal consumption for milk of the local population. It would also be needed 0.91 ·300 l = 273 NU. For the entire population, the necessary would be 273 · 4383 = 1196559 NU. Comparing to the existant situation (3335300 NU) it can be noticed that the surfaces cultivated with fodder crops creates an extra production for Victoria village and can sustain the ensurance of the optimum milk consumption.

CONCLUSIONS

Of the 15 villages, only in Bîrnova, Bosia, Golăieşti, Leţcani, Popricani, Prisecani, Rediu and Victoria, the obtained productions can provide the optimal level of consumption for milk and dairy products for the local population.

In villages Tomeşti and Ciurea the obtained productions do not cover the optimal milk and diary consumption, but also the actual forage base is not sufficient for to developing the local livestock.

Comarna, Costuleni, Miroslava and Holboca do not provide optimal consumption, even if their forage base could ensure the growth of larger herds of cattle and sheep for milk, to obtain higher production.

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