

VARIANTS OF SUPPLY FOR THE SUBURBAN AREA'S POPULATION OF THE CITY OF IAȘI (ROMANIA), WITH MILK AND DAIRY PRODUCTS IN 2009

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ABSTRACT - The purpose of this study is to determine whether increased production of milk in the area set (the suburban area of the city of Iași, Romania) can provide optimal consumption of milk and dairy products recommended for the local population. In this sens, we have three variants taken into analysis for consumption of milk and dairy products: V_1 - minimum consumption (180 l / capita / year) V_2 - average consumption (240 l / capita / year), V_3 - optimal consumption (300 l / capita / year). After analyzing these cases it was established that in Aroneanu village, increased average production per head has led to a surplus of production, all three variants being able to ensure optimal consumption of milk and dairy products and capitalizing on the open market and processing. In Bîrnova village, increasing production to ensure optimal recommended consumption of 300 liters per capita is not valid but in the third variant. Bosia village is situated on the first of five analyzed villages in providing optimum milk consumption. The excess production is the largest, and can cover higher needs on the free market and in processing. In the villages as Comarna and Ciurea optimal consumption of milk and

dairy products can not be ensured in actual conditions.

Key words: Milk, Yield, Livestock, Optimal Consumption.

REZUMAT - Variante de aprovizionare a populației zonei preorășenești a municipiului Iași cu lapte și produse lactate la nivelul anului 2009. Scopul acestei lucrări este de a stabili dacă creșterea producției de lapte în arealul stabilit (zona preorășenească a orașului Iași) poate asigura un consum optim recomandat de lapte și produse lactate pentru populația locală. În acest sens, s-au luat spre analiză trei variante de consum pentru lapte și produse lactate: V_1 – consumul minim (180 l/persoană/an), V_2 – consumul mediu (240 l/persoană/an), V_3 – consumul optim (300 l/persoană/an). În urma analizei acestor situații s-a stabilit faptul că, în comuna Aroneanu, creșterea producției medii pe cap de animal a dus la un surplus de producție, în toate cele trei variante putându-se asigura atât consumul optim de lapte și produse lactate, cât și valorificarea pe piața liberă și procesare. În comuna Bîrnova, majorarea producțiilor medii nu au dus la asigurarea

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consumului optim recomandat, de 300 l/locuitor, decât în cea de a treia variantă. Comuna Bosia s-a situat pe primul loc din cele cinci comune analizate, în sensul asigurării consumului optim de lapte, excedentele de producții fiind cele mai mari, putând acoperi nevoi mai mari în cadrul vânzărilor libere și al procesării. În comunele Ciurea și Comarna, consumul optim nu poate fi asigurat în condițiile existente.

Cuvinte cheie : lapte, producție, efective animale, consum optim.

INTRODUCTION

In modern society, food consumption occupies a place of prime importance in all measures of continuous improvement of living standards (Gîndu *et al.*, 2004; Tofan, 2004).

Domestic consumption of milk and dairy products is very limited quantity, per capita consumption is much lower than in other developed countries. Because of their nutritional properties and their dietary, milk and dairy products are part of the daily intake of the population in Romania. Consumption of these products depends primarily on the population's purchasing power and offer milk and dairy products. It should be noted also that has a large self-consumption in rural areas (Merce *et al.*, 2010, Ionel and Luca, 2010).

The suburban area of Iași is characterized mainly by poor milk production that can not provide an optimal consumption of milk and dairy products for the local population, therefore that market can

not be supplied for free sale or processing. Therefore, necessary measures are heady growth of the total production of milk, which can be achieved in two ways: increasing the livestock, where the forage allows and increasing average production per animal fed (Popovici *et al.*, 2006).

Average yield per fed animal may be increased by adopting different measures, such as: seeding and reseeding the areas occupied by pastures and meadows; increasing the area cultivated with forage crops. In 2009-2010, the uncultivated areas of land totalized about 750 ha; better use of pastures; use the program FEADR*, measure 121 - the construction and / or upgrading of cattle farms for milk production falling in the European milk quota system; acquisition of advanced genetic material (Dodoloi and Chiran, 2010).

MATERIALS AND METHODS

The study was conducted in the near-city area of Iași in villages Aroneanu, Bîrnova, Bosia, Ciurea and Comarna. Following the implementation of those measures to achieve average yields of 4000, 4500, 5000 liters for cow milk and 80, 100 and 120 liters for sheep milk, it follows a series of variants that will be analyzed at the village level.

To analyze these alternatives, it was taken into account data on livestock and

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dairy cattle and sheep population in the villages for the reference year 2009.

RESULTS AND DISCUSSION

In *Aroneanu* village it resulted the following variants: V_1 : 4000 l/head · 237 heads + 80 l/ head · 670 heads = 10016 hl; V_2 : 4500 l/ head · 237 heads + 100 l/ head · 670 heads = 11335 hl; V_3 : 5000 l/ head · 237 heads + 120 l/ head · 670 heads = 12654 hl (*Table 1*).

At an average production of 4000 liters per head of dairy cattle and 80 liters per head of milk sheep would result a total production of 10016 hl. In this production, the recommended optimal physiological decrease consumption (300 l/capita), for the local population, amounting to 9084 hl, results a surplus of 932 hectoliters (about 9% of total), of which about 65% would be exploited free market (606 hl), while the remaining 35% would be earmarked for processing (326 hl).

Table 1 - Data needed to calculate the variants in order to ensure the optimum milk consumption, on villages in 2009

Specification	UM	Aroneanu	Bîrnova	Bosia	Ciurea	Comarna
Cattle livestock	head	237	248	474	485	241
Sheep livestock	head	670	808	1610	1600	1050
Average cattle milk production	l/ head	3450	3460	3510	3490	3370
Average sheep milk production	l/ head	43	42	43	43	43
Total cattle milk production	hl	8176	858	16637	16926	8122
Total sheep milk production	hl	288	339	692	688	451
Population	capita	3028	4220	1965	10510	4590

Source: *Direction for Agricultural and Rural Development of Iași County*

In case of average yields of 4500 liters per head in dairy cows and 100 liters per head for milk sheep, the total production reaches 11335 hl in village *Aroneanu*. The need for optimal consumption in this village is 9084 hl, 2251 hl resulted in a surplus (about 20% of total). From this excess production, about 1463 hl (65%) will be for sale on the open market and for processing will reach about 788 hl (35%).

For V_3 variant, where the average milk yield of cows is 5000 liters per head, and 120 liters per head for sheep, resulting a total production of around 12654 hl. To ensure recommended optimum consumption remains a surplus of 3570 hl (about 28% of total), of which the free market could reach 2320 hl, and for processing around 1250 hl.

In *Bîrnova* village it resulted the following variants: V_1 : 4000 l/head · 248 heads + 80 l/ head · 808 heads =

10556 hl; V_2 : 4500 l/ head · 248 heads + 100 l/ head · 808 heads = 11963 hl; V_3 : 5000 l/ head · 248 heads + 120 l/ head · 808 heads = 13369 hl.

At an average production of 4000 liters per head of dairy cattle and 80 liters per head of sheep, would result a total production of 10556 hl. Recommended optimal physiological consumption (300 l / capita), for the local population, amounting to 12660 hl can not be achieved in these media productions, in which case it is recommended to increase livestock.

In case of average yields of 4500 liters per head of dairy cows and 100 liters per capita of sheep, the total production reaches 11963 hl in the Birnova village. Optimal consumption needs of 12660 hl can not be satisfied from the obtained, in which case it is recommended to increase the number of animals.

For V_3 variant, where the average milk yield of cows is 5000 liters per head, and 120 liters per head of sheep, results a total production of around 13369 hl. Following recommended optimum consumption, it remains a surplus of 709 hectoliters (about 5 % of total), of which on the free market could reach 461 hl and 248 hl for some processing.

In Bosia village it resulted the following variants: V_1 : 4000 l/head · 474 heads + 80 l/ head · 1610 heads = 20248 hl; V_2 : 4500 l/ head · 474 heads + 100 l/ head · 1610 heads = 22940 hl; V_3 : 5000 l/ head · 474 heads + 120 l/ head · 1610 heads = 25632 hl.

At an average production of 4000 liters per head of dairy cattle and 80 liters per capita of sheep, would result a total production of 20248 hl. From this yield we decrease the recommended optimal physiological consumption (300 l/capita), for the local population, amounting to 5895 hl and it results a surplus of 14353 hl (about 71% of total), of which about 65% would be exploited on the free market (9329 hl), while the remaining 35% would be used for processing (5024 hl).

In case of average yields of 4500 liters per head for dairy cattle and 100 liters per capita for sheep, the total production reaches 22940 hl in Bosia village. The need for optimal consumption is 5895 hl, resulted in a surplus of 17045 hl (about 74% of total). Of this surplus production, about 11079 hl (65%) will be for sale on the open market and for processing will reach about 5966 hl (35%).

For V_3 variant, where the average yield of dairy cattle is 5000 liters per head, and 120 liters per head for sheep, results a total production of around 25632 hl. Following recommended optimum consumption, it remains a surplus of 19737 hl (about 77 % of total), of which on the free market could reach 12829 hl and for processing around 6908 hl.

In Ciurea village it resulted the following variants: V_1 : 4000 l/head · 485 heads + 80 l/ head · 1600 heads = 20680 hl; V_2 : 4500 l/ head · 485 heads + 100 l/ head · 1600 heads = 23425 hl; V_3 : 5000 l/ head · 485

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heads + 120 l/ head · 1600 heads = 26170 hl.

At an average production of 4000 liters per head for dairy cattle and 80 liters per head for sheep, would result a total production of 20680 hl. The recommended optimal physiological consumption (300 l/capita) for the local population amounts 31530 hl, resulting a deficit of 10850 hl of milk.

In case of average yields of 4500 liters per head in dairy cattle and 100 liters per head of shee, the total production reaches 23425 hl in Ciurea village. The need for optimal use common being 31530 hl, results a deficit of 8105 hl, so, increasing the average production will not be sufficient in order to ensure optimal consumption and we recommend increasing the livestock.

For V_3 variant, where the average milk yield of cattle is 5000 liters per head, and 120 liters per head for sheep, results a total production of 26170 hl. The yield deficit is 5360 hl, which proves that without an increase in the number of cattle and sheep, the optimal consumption for milk and dairy products can not be achieved.

In Comarna village it resulted the following variants: V_1 : 4000 l/head · 241 heads + 80 l/ head · 1050 heads = 10480 hl; V_2 : 4500 l/ head · 241 heads + 100 l/ head · 1050 heads = 11895 hl; V_3 : 5000 l/ head · 241 heads + 120 l/ head · 1050 heads = 13310 hl.

At an average production of 4000 liters per head for dairy cattle and 80 liters per heas for sheep, would

result a total production of 10480 hl. Recommended optimal physiological consumption (300 l/capita), for the local population amounts 13770 hl. The result is a production deficit of 3290 hl that may be supplemented only by increasing the number of animals.

In case of average yields of 4500 liters per head in dairy cattle and 100 liters per head for sheep, the total production reaches 11895 hl in Comarna village. The need for optimal consumption is 13770 hl, so, the deficit is 1875 hl.

And the variant V_3 , where the average milk yield of cattle is 5000 liters per head, and 120 liters per head for sheep, results a total production of 13,310 hl that can not meet the need for optimal amount of 13,770 hl. The only solution remains the increasing of livestock.

CONCLUSIONS AND RECOMMENDATIONS

In Aroneanu village, increased average production per head has led to a surplus of production, all three variants being able to ensure optimal consumption of milk and dairy products and capitalizing on the open market and processing.

In Bîrnova village, increasing production to ensure optimal recommended consumption of 300 liters per capita is not valid but in the third variant.

Bosia village is situated on the first of five analyzed villages in providing optimum milk

consumption. The excess production is the largest, and can cover higher needs on the free market and in processing.

Comarna and Ciurea villages are deficient even after increasing average yields, and can not ensure optimal consumption for milk and dairy products with the actual livestock.

Consequently, the following recommendations are made: seeding and reseeded for the areas occupied by pastures and meadows; increasing the area cultivated with forage crops. In 2009-2010, un-worked areas of land totalized about 750 ha; a better use of pastures; use the FEADR program, measure 121, the construction and/or upgrading of dairy farms in order to increase production; acquisition of advanced genetic material; increasing number of dairy cattle and sheep in Bîrnova, Ciurea and Comarna villages.

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