

STRUCTURE OF MILK PRODUCTION IN THE SOUTH WEST OLTENIA REGION, IN NATIONAL CONTEXT (2013-2015)

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Abstract

The paper presents a synthetic overview of total milk production, discussing the main components (cow's milk and buffalo, respectively sheep's milk and goat's milk). Reference is also made to the national level of the indicators so as to achieve a spatio-temporal positioning of the analyzed region and of its component counties. It is noted that the South - West Oltenia Region does not exceed 12.50% for any analyzed indicator. Dolj county is the most important regional milk supplier and Mehedinţi County represents the administrative territorial unit with the lowest contribution to the regional level of the indicator.

Key words: milk, production, buffalo, goat, sheep, cow

INTRODUCTION

The field of animal husbandry appears as a supplier of raw materials to produce food and non-food products. From food, we report dairy and meat products [2].

From a food, hygienic or technological point of view, whole raw milk is the product obtained by milking the animals in lactation, unmodified in terms of the physio-chemical and organoleptic characteristics of the milk [6].

The chemical composition of milk depends on several factors. If one of the key factors is the species it can be shown that within the same species the chemical composition differs depending on the diet, race, individual, lactation month, maintenance status, etc. [4].

By the physicochemical composition (protein, dry matter, fat content, presence of impurities or inhibitors), the value of milk is appreciated or depreciated [3].

Milk and dairy products have a particularly important role to play in feeding populations in European countries [8].

The Milk and Dairy Sector is one of the most important in Romania's agriculture [7].

In cows, individual milk production is influenced by a number of factors that by their nature can be grouped into genetic factors and environmental factors [5].

The cows, sheep, goat and buffalo milk is taken over in the recovery circuit. The largest share comes from cow and sheep milk [1].

Milk is a highly perishable product, which requires a logistic system along the chain to facilitate consumer access to the required products in the shortest time, in proper form and in superior quality parameters [9].

MATERIALS AND METHODS

To accomplish the work, several working methods were used, such as documentation, percentage method, comparison method, etc. The presented and processed information was extracted from the National Institute of Statistics' electronic database [10].

The indicator used was total milk production, presented at a general level (including calves' consumption), as well as those for dairy cows and buffaloes respectively sheep and goats.

The time comparison used fixed-index indices (2013 reference period), and the comparison in space went from the national level of the indicators to which the regional and county data were reported.

RESULTS AND DISCUSSIONS

The actual production in the period 2013-2015, its dynamics and structure, as well as the national share are presented in Table 1 [10].

The total national production was 48,728 thousand hl in 2013, 50,535 thousand hl for

2014 and 49,156 thousand hl in 2015. The average of the period reached a level of milk production of 49,473 thousand hl. At the national level, the milk production dynamics had values exceeding the reporting base by 3.71% in 2014, by 0.88% in 2015 and by 1.53% for the average.

Table 1. Total milk production including calves' consumption (mii hl)

Specification	Year 2013		Year 2014		Year 2015		Average**			
	Eff.*	Dyn.**	Eff.*	Dyn.**	Eff.*	Dyn.**	Eff.*	Dyn.	Regional structure (%)	share at national level (%)
Total national	48,728	100	50,535	103.71	49,156	100.88	49,473.0	101.53	-	100
South-West Oltenia region	4,845	100	5,073	104.70	4,977	102.72	4,965.0	102.48	100	10.03
Dolj	1,073	100	1,193	111.18	1,123	104.66	1,129.7	105.28	22.75	2.28
Gorj	947	100	984	103.91	956	100.95	962.3	101.61	19.38	1.94
Mehedinți	782	100	809	103.45	808	103.32	799.7	102.26	16.11	1.62
Olt	1,028	100	1,028	100.0	1,050	102.14	1,035.3	100.71	20.85	2.09
Vâlcea	1,015	100	1,059	104.33	1,040	102.46	1,038.0	102.27	20.91	2.10

* <http://statistici.insse.ro/shop/index.jsp?page=tempo3&lang=ro&ind=AGR202A#>

** own calculation

The South - West Oltenia Region recorded milk production as follows: 4,845 thousand hl in 2013, 5,073 thousand hl in 2014, 4,977 thousand hl for 2015 and 4,965 thousand hl at the average of the interval. The region highlights an upward trend with 4.70% in 2014 (104.70%), 2.72% in 2015 (102.72%), and 2.48% in the average of the analyzed range (102.48%).

For Dolj county, the yields recorded during the analyzed period were 1,073 thousand hl in 2013, 1,193 thousand hl in 2014, 1,123 thousand hl for 2015 and 1,129.7 thousand hl for the average period. In the county Dolj, the comparison of the comparison base (production in 2013) is 11.18% in 2014 (111.18%), 4.66% in 2015 (104.66%) and 5.28% in the average (105.28%).

Gorj county records an average milk production of 962.3 thousand hl, averaged on the basis of annual production of 947 thousand hl in 2013, 984 thousand hl in 2014 and 956 thousand hl in 2015. The dynamics show overruns of 3.91% 2014 (103.91%), 0.95% in

2015 (100.95%), and 1.61% in the average (101.61%).

Mehedinți county, due to the smaller number of animals it has, shows the lowest production values of 782 thousand hl in 2013, 809 thousand hl for 2014, 808 thousand hl for the year 2015 and 799.7 thousand hl for the average of the analyzed range. As a result of this situation, there are overtaking comparisons with 3.45% in 2014 (103.45%), 3.32% in 2015 (103.32%) and 2.26% in average (102.26%).

In Olt county, an average level of milk production of 1,035.3 thousand hl and sequential values of 1,028 thousand hl in 2013, 1,028 thousand hl in 2014 and 1,050 thousand hl in 2015 are found. The dynamically surprising increases were of 2.14% in 2015 (102.14%) and 0.71% of the average (100.71%) in Olt county.

Milk production in Vâlcea county was 1,015 thousand hl in 2013, 1,059 thousand hl for 2014, 1,040 thousand hl in the year 2015 and 1,038 thousand hl for the average of the analyzed interval. The dynamics is above the base of the reporting base with 4.33% in 2014,

2.46% in 2015 and 2.27% for the average of the range (104.33, 102.46 and 102.27%).

The structure of regional milk production highlights for the counties the increasing proportions as follows: 22.75% Dolj county, 20.91% Vâlcea county, 20.85% Olt county, 19.38% Gorj county, 16.11% Mehedinți county.

Compared to the level of the national milk production, the region and its component counties are registered with 10.03% of the region, 2.28% of Dolj county, 2.10% of Vâlcea county, 2.09% of Olt county, 1.94% of Gorj county and 1.62% of Mehedinți county.

The level of production of cow's milk and buffalo milk including calves' consumption is mentioned in Table 2 [10].

Table 2. Total production of cow and buffalo milk including calves' consumption (mii hl)

Specification	Year 2013		Year 2014		Year 2015		Average**			
	Eff.*	Dyn.**	Eff.*	Dyn.**	Eff.*	Dyn.**	Eff.*	Dyn.	Regional structure (%)	share at national level (%)
Total national	42,593	100	44,015	103.34	42,663	100.16	43,090.3	101.17	-	100
South-West Oltenia region	4,064	100	4,297	105.73	4,185	102.98	4,182.0	102.90	100	9.70
Dolj	805	100	918	114.04	847	105.22	856.7	106.42	20.48	1.99
Gorj	871	100	905	103.90	874	100.34	883.3	101.41	21.12	2.05
Mehedinți	636	100	665	104.56	661	103.93	654.0	102.83	15.65	1.52
Olt	815	100	830	101.84	839	102.94	828.0	101.59	19.80	1.92
Vâlcea	937	100	979	104.48	964	102.88	960.0	102.45	22.95	2.23

* <http://statistici.inssse.ro/shop/index.jsp?page=tempo3&lang=ro&ind=AGR202A#>

** own calculation

The total national production was 42,593 thousand hl in 2013, 44,015 thousand hl for 2014 and 42,663 thousand hl in 2015. The average of the period reached a production level of 43,090.3 thousand hl. At national level, milk production dynamics had values exceeding the reporting base by 3.34% in 2014, 0.16% in 2015 and 1.17% on average (103.34, 100.16 and 101.17% respectively).

The South - West Oltenia Region recorded cow and buffalo milk production as follows: 4,064 thousand hl in 2013, 4,297 thousand hl in 2014, 4,185 thousand hl for 2015 and 4,182 thousand hl at the average of the interval. The region shows an upward trend with 5.73% in 2014 (105.73%), 2.98% in 2015 (102.98%), and 2.90% in the average of the analyzed range (102.98%).

For Dolj county, the production recorded during the analyzed period was 805 thousand hl in 2013, 918 thousand hl in 2014, 847 thousand hl for 2015 and 856.7 thousand hl for the average period. The county, in terms of

dynamics, presents the baseline comparisons (2013) as follows: 14.04% in 2014, 5.22% in 2015 and 6.42% in the average of the interval. Gorj county records an average of 883.3 thousand hl, averaged based on the annual outputs of 871 thousand hl in 2013, 905 thousand hl in 2014 and 874 thousand hl in 2015. The dynamics built out highlights overshoot of the reference of 3.90% in 2013, of 0.34% in 2015 and of 1.41% in the average of the period.

In Mehedinți county, the lowest values of the indicator are found: 636 thousand hl in 2013, 665 thousand hl for 2014, 661 thousand hl for the year 2015 and 654 thousand hl for the average of the analyzed interval. Existing increases (compared to the reporting deadline) were 4.56% in 2014, 3.93% in 2015 and 2.83% in the average.

For Olt county there is an average production level of 828 thousand hl and sequential values of 815 thousand hl in 2013, 830 thousand hl in 2014 and 839 thousand hl in the year 2015. If

we analyze the evolution over time, the indicator is notes increases of 1.84% in 2014, 2.94% in 2015 and 1.59% in the average.

The production in Vâlcea county was 937 thousand hl in 2013, 979 thousand hl for 2014, 964 thousand hl for the year 2015 and 960 thousand hl for the average of the analyzed interval. As a result of this situation, in the dynamics computed, only supra-unit values of the component indices are found: 104.48, 102.88 and 102.45% for 2014, 2015 and respectively the average of the period.

The structure of the regional milk production shows for the counties decreasing weights as

follows: 22.95% for Vâlcea county, 21.12% for Gorj county, 20.48% for Dolj county, 19.80% for Olt county, 15.65% for Mehedinți county.

Compared to the national production of cow's and buffalo milk production, including the consumption of calves, the region and its constituent counties are registered with 9.70% of the region, 2.23% of Vâlcea county, 2.05% of Gorj county, 1.99% of Dolj county, 1.92% of the county Olt and 1.52% Mehedinți county. The production of sheep and goat milk is presented in Table 3 [10].

Table 3 Total Sheep and Goat Milk Production (thousand Hl)

Specification	Year 2013		Year 2014		Year 2015		Average**			
	Eff.*	Dyn.**	Eff.*	Dyn.**	Eff.*	Dyn.**	Eff.*	Dyn.	Regional structure (%)	share at national level (%)
Total national	6,135	100	6,520	106.27	6,493	105.83	6,382.7	104.04	-	100
South-West Oltenia region	781	100	776	99.36	792	101.41	783.0	100.26	100	12.27
Dolj	268	100	275	102.61	276	102.98	273.0	101.86	34.86	4.28
Gorj	76	100	79	103.95	82	107.89	79.0	103.95	10.09	1.24
Mehedinți	146	100	144	98.63	147	100.68	145.7	99.79	18.61	2.28
Olt	213	100	198	92.96	211	99.06	207.3	97.32	26.47	3.25
Vâlcea	78	100	80	102.56	76	97.43	78.0	100.0	9.96	1.22

* <http://statistici.insse.ro/shop/index.jsp?page=tempo3&lang=ro&ind=AGR202A#>

** own calculation

The total national production was 6,135 thousand hl in 2013, 6,520 thousand hl for 2014 and 6,493 thousand hl in 2015. The average of the period recorded a sheep and goat milk production of 6,382.7 thousand hl (+ 4.04% in dynamics). At national level, milk production dynamics have seen values exceeding the reporting base by 6.27% in 2014 and by 5.83% in 2015.

The South - West Oltenia region recorded outputs as follows: 781 thousand hl in 2013, 776 thousand hl in 2014, 792 thousand hl for 2015 and 783 thousand hl at the average of the interval. The region highlights a sinuous evolution of the indicator, with 1.41 or 1.20 percent outposts in 2015, overtaking by 0.26 percent for the average and declines in 2014 -0.64%.

For Dolj county, the recorded production was 268 thousand hl in 2013, 275 thousand hl in 2014, 276 thousand hl for 2015 and 273 thousand hl for the average. Baseline exceedances (2013) are 2.61% in 2014, 2.98% in 2015 and 1.86% in the mid-range.

Gorj county records an average production of sheep and goat milk of 79 thousand hl, averaged on the basis of the annual production of 76 thousand hl in 2013, 79 thousand hl in 2014 and 82 thousand hl in 2015. Dynamics highlights exceedances (of the reference period) by 3.95% in 2014, 7.89% in 2015 and 3.95% in the average of the period.

Mehedinți county, shows production values of 146 thousand hl in 2013, 144 thousand hl for 2014, 147 thousand hl for the year 2015 and 145.7 thousand hl for the average of the

analyzed interval. Consequence of this state of affairs is the dynamics formed, characterized by the existence of an over-unitary level (in 2015 100.68%) and two subunit levels in 2014 and the average of the period (98.63 and 99.79%).

For Olt county there is an average level of sheep and goat milk production of 207.3 thousand hl and sequential situations of 213 thousand hl in 2013, 198 thousand hl in 2014 and 211 thousand hl in 2015. The indicator dynamics only contains subunit values, which marks its downward trend.

The production in Vâlcea county was 78 thousand hl in 2013, 80 thousand hl for 2014, 76 thousand hl for the year 2015 and 78 thousand hl for the average of the analyzed interval. For this county there is an overstatement of the reporting base (+ 2.56% in 2014), a sub-unit level (-2.57% in 2015) and an equilateral value of the dynamic indexes for the average of the interval.

The structure of regional milk production shows, for the counties, the following weights: 34.86% for Dolj county, 26.47% for Olt county, 18.61% for Mehedinți county, 10.09% for Gorj county, 9.96% for Vâlcea county.

Compared to the level of the national milk production, the region and its counties are registered with: 12.27% of the region, 4.28% of Dolj county, 3.25% of Olt county, 2.28% of Mehedinți county, 1.92% of Gorj county and 1.22% of Vâlcea county.

CONCLUSIONS

Considering the data presented in the previous chapters, on the evolution of milk production, both at the total level and for the main species, a series of conclusions.

Concerning the total national milk production including the consumption of calves, there is a fluctuating evolution.

A similar situation is also encountered in the case of total cow and buffalo milk production including calves' consumption.

The production of sheep and goat milk was, on average, 6382.7 thousand hl in the analyzed period, with an oscillating trend.

The South West Oltenia region shows a fluctuating evolution for all indicators analyzed.

At national level, regional production is recorded with variable weights as follows: 12.27% for sheep and goat milk, 10.03% for total production and 9.70% for cow's milk and buffalo milk.

The county structure is dominated by the county of Dolj, at general level and in the case of sheep and goat milk, Mehedinți county is the last place in total and for cow and buffalo milk. The "mountain" counties are predominant in the case of cow and buffalo milk production, and the "plains" counties in the sheep and goat milk production.

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