

## STUDIES CONCERNING EVOLUTION OF SOME MILK PRODUCTION INDICATORS ON OLTENIA REGION COW FARMS INCLUDED IN OFFICIAL PRODUCTION CONTROL

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**Key words:** *cattle population, farms, milk, production, lactations*

### ABSTRACT

*The paper presents the farm number and quantitative evolution of lactations and raw milk production obtained in cows farms depending on herd size at Oltenia regional level based on the average productivity per head. The values of this indicator is relevant for genetic improvement process trend and measurement, help to dimension of processing industry and also for the farmers due they influence destination and yield of products obtained in direct correlation with economic results of raw material processing.*

*This is an statistical study considering only effective registered in the COP during 01.10.2009 – 30.09.2011 period. The study revealed that largest number of farms with COP on region is recorded in Mehedinți, at the opposite being situated Dolj and Olt, counties with crop traditions. In all counties, best results were recorded on large farms. The studied indicators presented independent values variations which sometimes is significant.*

### INTRODUCTION

Due the nutritive quality of milk and the large number of milk products, this is one of the most important products obtained from livestock (Vladu M. 2009).

Milk's production is influenced by a series of factors which depend on the animal's potential, its maintenance conditions (shelter, microclimate, food, water), and also the hygienic conditions during and after the milking process (G. Onaciu, 2010).

In our country, the annual milk production is estimated at over 5 million tonnes, the bovines participating with approximately 87% from the total milk production, the average production per animal exceeding 3000 liters annual (Roxana Florea, Elena Gîndu, 2011). Normal bovine milk contains about 3,5% of protein, of which casein constitutes 80% and whey proteins 20% (Pihlanto Anne, 2011).

The milk business today is highly competitive.

The milk producers need information on their milk production, milk quality, and market prices in order to remain competitive.

Much of this information is obtained through milk checks and analysis.

To determine the destination and price of raw milk material, quantitative production represent important indicators and also, together with the fat and protein contents, is some of the main objectives in cattle amelioration (Vladu M. & all, 2007).

The most important indicators of milk production in Romania is collected and evaluated by The Official Control of Performance – COP (Georgescu & all 1998) which are one of the mainly departments of the National Agency for Improvement and Reproduction in Animal Husbandry (ANARZ), institution designate to measure and estimate the performance objectives of the selection in order to improve the species national status.

## MATERIAL AND METHOD

The present study shows the evolution of the main indicators of effectiveness and raw-milk production recorded by COP on cows population at South-West Region level during the 1.10.2009 – 30.09.2011 period.

The primary data were provided by The Official Control of Performance (COP), one of the main departments of the National Agency for Improvement and Reproduction in Animal Husbandry (ANARZ).

Annually, based on data supplied by operators authorized to carry out the control, ANARZ published a report of activity in nationwide cattle growth.

The operators authorized to collect samples and primary data for Oltenia region in the studied interval were:

- 1.A.C.T. Dolj branch – Dolj county;
- 2.S.C. Zooexpert SRL Brașov – Gorj county;
- 3.A.C.T. Mehedinți branch – Mehedinți county;
- 4.S.C. Zooexpert SRL Brașov – Olt county;
- 5.A.C.T. Vâlcea branch – Vâlcea county.

According to COP procedures, the collected data during study period were reported for the intervals 01.10.2009 – 30.09.2010 and 01.10.2010 – 30.09.2011.

Following statistical processing were observed the regional and county situation recorded in the study interval in order to conclude which measures can be adopted for obtain the best results.

## RESULTS AND DISCUSSIONS

Oltenia is one of the 8 Development Regions established in 2000 based on Chapter 21 „Regional policy and coordination of structural instruments”, at Romania national level to pursue the European system of nomenclature of territorial units (NUTS), according to the EU acquis (National Rural Development Plan 2007-2013, 2012). The region has centre in Craiova city and include the following 5 counties: Dolj, Gorj, Mehedinți and Vâlcea.

The region presents very diverse natural and socio-economic conditions which make necessary that the researches to be locally focused.

The Official Control of Production (COP), taken since 2007 by Cattle Farmers Associations and Private Organizations of Production Control, have role to measure and predict performance which form the selection objectives target (Răduca Elisaveta, Manu Mihaela, 2011).

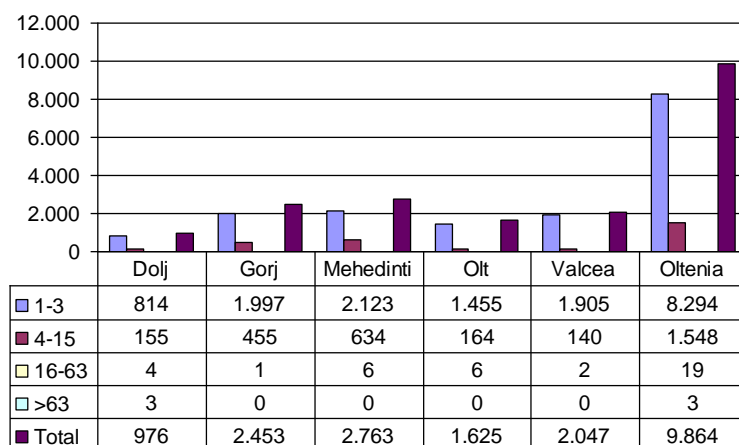
During study period, in Oltenia region only 3 breeds and their crossbreeding were included in COP: Brown-Swiss, Romanian Spotted, and Romanian Black and White – Holstein Friesian.

The official data from ANARZ on 30.09.2010 indicate 50.053 farms recorded nationwide included in COP, of which 9.864 representing 19,71% farms on Oltenia region.

A large number of thus farms is represented by individual farms with effectiveness of 1-3 heads/farm, in 2010 only 3 farms in Oltenia having more than 63 heads, the work volume and operators number for collect and processing data being very high.

Concerning regional county distribution of farms recorded in COP, in 2010, on the first place was Mehedinți with 28,01% of regional farms number, followed by Gorj with 24,87%.

The main county specialized on crop production, Dolj and Olt, detain the minimum number of COP recorded farms, respective 9,89% and 16,47% (Fig. 1).

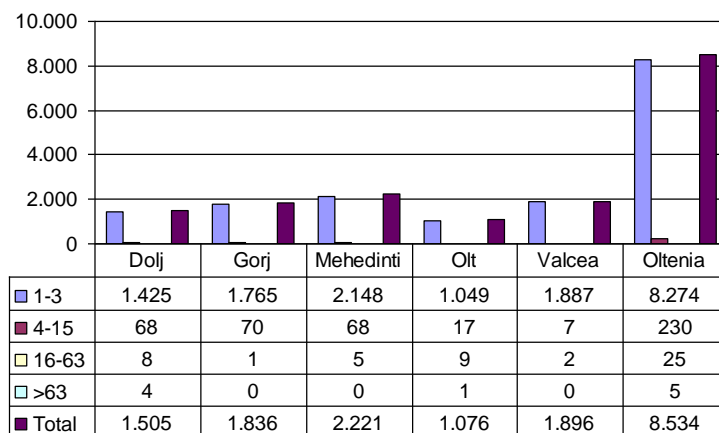


**Fig. 1. – Situation of Oltenia region cows farm recorded on COP according with their effective on 2009-2010 year**

The farm number of large farms is very low, only 0,22% or regional farms having more than 16 head, of which 31,82% located in Dolj, 27,27% in Olt an also in Mehedinți and the reste in ohter 2 countyes.

The medium size farm situation is direct proportional with general situation of COP Oltenia farms, the order of counties Mehedinți, Gorj, Olt, Dolj and Vâlcea.

On 30.09.2011, both number of farms nationwide and regional recorded in COP were decrease comparative with previous year, having value of 46.554 - 3.481 decreasing, respective 8.534 – 1.330 decrease. Comparative with previous year, the regional percent of farms recorded in COP decreased too, his value in 2011 being 18,33% (Fig. 2).



**Fig. 2. – Situation of Oltenia region cows farm recorded on COP according with their effective on 2010-2011 year**

On this year, the regional number of over 63 heads farms with COP increase to 5.

Regional distribution of farms were modified slightly comparative with previous year. Mehedinți remain the county with largest number of farms controlled but relative to previous year, the percent reported to regional number, decreased to 26,03%. On second place were Vâlcea county which attaint 22,22%, exceeding Gorj county which reach a value of 21,51%. The countyes Dolj and Olt were change places comparative with previous year, the percents reached being 17,64% and respective 12,61%

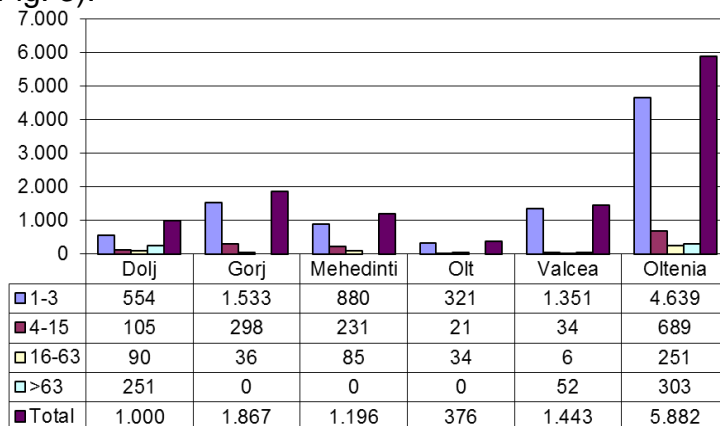
In 2010-2011 interval, the number of farms with over 16 heads easily increase to 0,35%, largest percents being recorded in Dolj (40%) and Olt (33,33%). On this indicator, Mehedinți county decrease with over 10%, the actual value reaching only 16,67%.

Also, the farms with 4-15 heads regional number decreased to the 2,70% of total, the largest difference being recorded on Mehedinți where was collected and recorded COP data only in 10,72% farms comparative with previous year and Gorj with 15,38%.

The second parameter of this research were represented by total number of lactations recorded started in active interval previous of studied period.

In 2009-2010 interval, at regional level in COP were recorded 5.882 lactations representing 9,2% of national number (63.902).

With 26,26%, Gorj county were situated on first place in region depending on lactations number (Fig. 3).

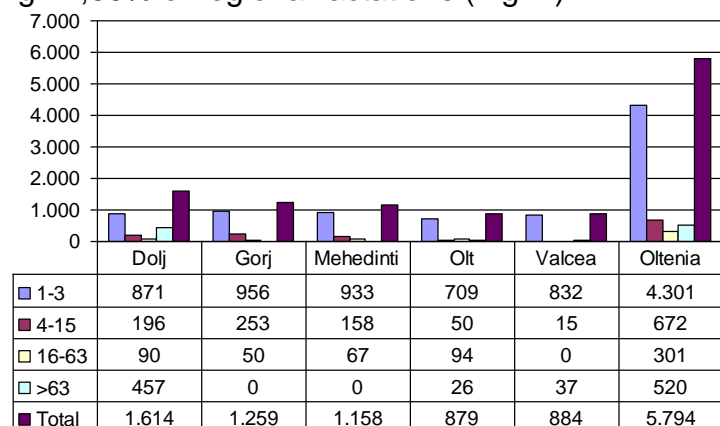


**Fig. 3. – Situation of lactation number in Oltenia region recorded on COP according with the farms effective on 2009-2010 year**

Second place was occupied by Vâlcea county which reach 24,53% of regional lactations. Is interesting to observe that Olt county which has the third place depending on regional farms number is situated on last place regarding lactations number with only 6,39%.

On 2010-2011, in Oltenia were recorded 5.794 lactations, representing 7,91% of national recorded number(73.249). The regional number easy decrease comparative with previous year and also, the percent of lactation nationwide reported.

With an increase of 61,95% reported to previous year, Dolj county is on the first place in region having 27,86% of regional lactations (Fig. 4).



**Fig. 4. – Situation of lactation number in Oltenia region recorded on COP according with the farms effective on 2010-2011 year**

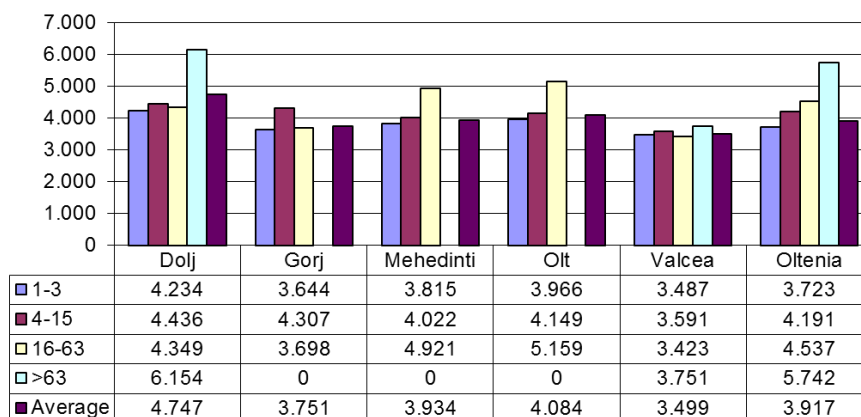
On second place is situated Gorj county which reach 21,73% of regional lactations, after decrease with 32,56% relative to previous year.

Mehedinți county, the first concerning farm number in region analized by COP, rech onli the third place on lactations number with 19,99%.

Olt and Vâlcea countyes reach each 15% of regional lactations but, relative to previous year, number of lactations reported to regional one decreased in Vâlcea with 61,26% but increase in Olt with 42,77%.

On both years of study, an large number of lactations were recorded in farms over 63 heads having milk production as main activity object and which benefit of specialized personnell.

This can be easy view in figure 5 were is presented the average milk production depending on farm size.

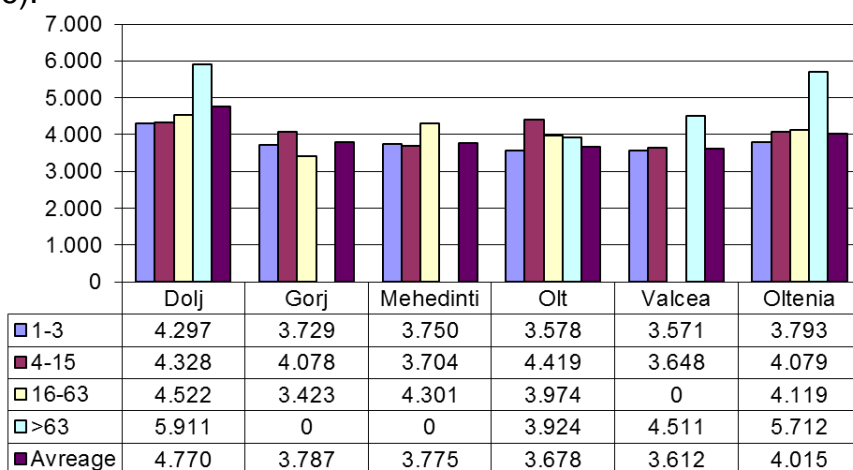


**Fig. 5. – Average of milk production on standard lactation in Maturity Equivalent (EM, kg) according with the farms effective on 2009-2010 year**

In 2009-2010 year, the maxim average milk production calculated as maturity equivalent (EM) were recorded in large farms (over 63 heads) in Dolj county, being 6.154 kg, followed by farms with 16-63 heads from Olt and Mehedinți countyes.

For the reste of countyes ant farm dimensions, the average production in EM has values between 3.487 and 4.436 kg.

Once again, in 2010-2011 the largest average production were recorded in Dolj county on farms with over 63 heads, followed by farms with 14-63 farms from Dolj and Olt countyes (Fig. 6).



**Fig. 6. – Average of milk production on standard lactation in Maturity Equivalent (EM, kg) according with the farms effective on 2010-2011 year**

Even if average productions recorded in region were easy increase (+2,44%) comparative with previous year, was recorded variations at countyes level: increase on Vâlcea (+3,12%), Gorj (+9,5%) and Dolj (+4,82%) but decrease on Olt (-9,94%) and Mehedinți (-4,04%).

The 5 and 6 figure reveale that if farm dimension increase, the milk production and in the mean time, improvements made by farmers in all growing chain: in effectives structure (gentic basis), specilized constructions (internal environment), installations, quality fodder, specialized personnell, veterinary medicine etc, can be recovered in economic efficiency conditions.

## CONCLUSIONS

In Oltenia region only 3 breeds and their crossbreedings were included in COP: Brown-Swiss, Romanian Spotted, and Romanian Black and White – Holstein Friesian

During the study, a large number of farms with COP from Oltenia region is represented by very small individual farms (1-3 heads), in 2009-2010 year only 3 farms, respectively 5 farms for 2010-2011 year having more than 63 heads. As an effect, a large amount of work is necessary for collect and process data according with COP protocols.

In both year studied, a large number of farms included in COP were located in hilly and mountain counties: Mehedinți, Gorj and Vâlcea, situation which correspond with lactation number of lactation recorded, at the opposite being situated Dolj and Olt counties.

Data analyzed shown that if farm dimension increase, the milk production and improvements made by farmers in all growing chain: in effective structure (genetic basis), specialized constructions (internal environment), installations, quality fodder, specialized personnel, veterinary medicine etc, can be recovered in economic efficiency conditions.

Also, can be observed that productions obtained is larger on cereals counties than in hilly and mountains ones, which is probably due to the fodder structure: on hilly and highland regions green fodder on grassland represent the base of animal nutrition due smaller cereals productions and highly price of those on local market.

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