

RESEARCHES CONCERNING THE DYNAMICS QUALITATIVE INDEX OF MILK PRODUCTION TO A POPULATION OF CATTLE BREEDED IN THREE FARMS

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Abstract

In the selection process, along with the milk's quantity obtained from an animal, an important part is its quality, which has a big influence in the recalculated milk's quantity and also in its nutritive, energetic and biological value which the milk contains both as food and as fodder. In qualitative milk's appreciation, mostly important is the hygienic and sanitary quality, expressed in total germs number (TGN) and the number of somatic cells (NSC). In the same time are important the fat, protein, lactose and dry substance quantity. The total germs number (TGN) obtained in the 24 examined samples has been having values between 10x1000 germs/ml and 188x1000 germs/ml, and the number of somatic cells has been situated between the values of 17000 NSC/ml and 483000 NCS/ml.

Key words: milk, quality, germs, somatic cell

INTRODUCTION

Milk's quality 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. The bulk tank SCC is a good indicator of overall udder health and a good means for evaluating the mastitis control program [1]. Somatic cell count (SCC), which is the number of white cells per milliliter of milk, increases in the bulk tank as mastitis spreads in the herd. High SCC scores indicate the presence of mastitis in the herd and is reflected in the average score of the bulk tank [2]. Most marketing organizations and regional authorities, regularly measure SCC on bulk tank milk and use these scores for penalty deductions and/or incentive payments [3].

MATERIAL AND METHOD

The research was effectively done on a population of cows belonging to three scientific private farms of Satu Mare County, where the milks samples were collected monthly from the tank milk, from January 2008 till December 2009. For research of milk quality were analyzed 144 samples of milk thus, 48 milk samples in S.C. Agrind farm, 48 milk samples in S.C. Agricola farm and 48 milk samples in S.C. Ralu farm, that have followed few characteristics: fat, protein, lactose, dry subst. no fat, TGN (total

germens number) and SCC (somatic cell count). Database obtained after laboratory analysis were performed statistically and interpreted and presented in tables and graphs.

RESULTS AND DISCUSIONS

The milk from the tank tested for the number of somatic cells and the total number of germs is bringing valuable in formations about the current status of mastitis and sanitation in their farms.

Analysis of the researches results on health mammary gland and hygiene milking by TGN and analysis SCC show a good hygiene of milk and show improvement milk quality after the introduction of TGN and SCC stages on the milk quality and mammary gland health insurance.

Analyzing the number of somatic cells for the two years considered for the study, show the most diminishing values for the milk's samples from S.C. Agricola farm, of 300,51 * 10³ cell/ml, followed by values for the milk's samples from S.C. Agrind farm, with average by 354,44 * 10³ cell/ml and 424,07 * 10³ cell/ml for the milk's samples from S.C. Ralu farm. The same situation was registered for the total number of germs where the lowest value was made in samples of milk collected from S.C. Agricola farm from Petresti, of 62.000 germ/ml, with values between 10.000 germ/ml and 162.000 germ/ml.

Table 1
The values obtained follows milk's quality control

| Farms | Control period | Samples nr. | Fat (g/100g) | Protein (g/100g) | Lactose (g/100g) | Dry substance no fat (g/100g) | SCC/ml x1000 | TGN/ml x1000 |
|---------------|----------------|-------------|--------------|------------------|------------------|-------------------------------|--------------|--------------|
| S.C. Agrind | 2008 | 24 | 3,9 | 3,4 | 4,80 | 8,92 | 389,52 | 156,36 |
| | 2009 | 24 | 3,51 | 3,43 | 4,84 | 8,97 | 274,73 | 197,73 |
| S.C. Agricola | 2008 | 24 | 3,82 | 3,40 | 4,70 | 8,82 | 292,85 | 67,58 |
| | 2009 | 24 | 3,88 | 3,51 | 4,72 | 8,95 | 318,64 | 48,91 |
| S.C. Ralu | 2008 | 24 | 4,03 | 3,34 | 4,66 | 8,73 | 410,74 | 314,10 |
| | 2009 | 24 | 3,67 | 3,42 | 4,61 | 8,75 | 465,4 | 35,90 |

Table 2
The average values of the main traits of milk obtained from three farms

| Farms | Samples Nr. | Fat (g/100g) | Protein (g/100g) | Lactose (g/100g) | Dry substance no fat (g/100g) | SCC/ml x1000 | TGN/ml x1000 |
|---------------|-------------|--------------|------------------|------------------|-------------------------------|--------------|--------------|
| S.C. Agrind | 48 | 3,78 | 3,41 | 4,81 | 8,93 | 354,44 | 169 |
| S.C. Agricola | 48 | 3,84 | 3,43 | 4,70 | 8,86 | 300,51 | 62,03 |
| S.C. Ralu | 48 | 3,94 | 3,36 | 4,65 | 8,73 | 424,07 | 246,24 |

The average number of milk somatic cells was gut enough in all tree farms (Table 1,2) and varied considerably within 13×10^3 cells/ml and 452×10^3 cells/ml and the TGN

was also gut enough in all tree farms and varied within 10×10^3 TGN/ml and 339×10^3 TGN/ml.

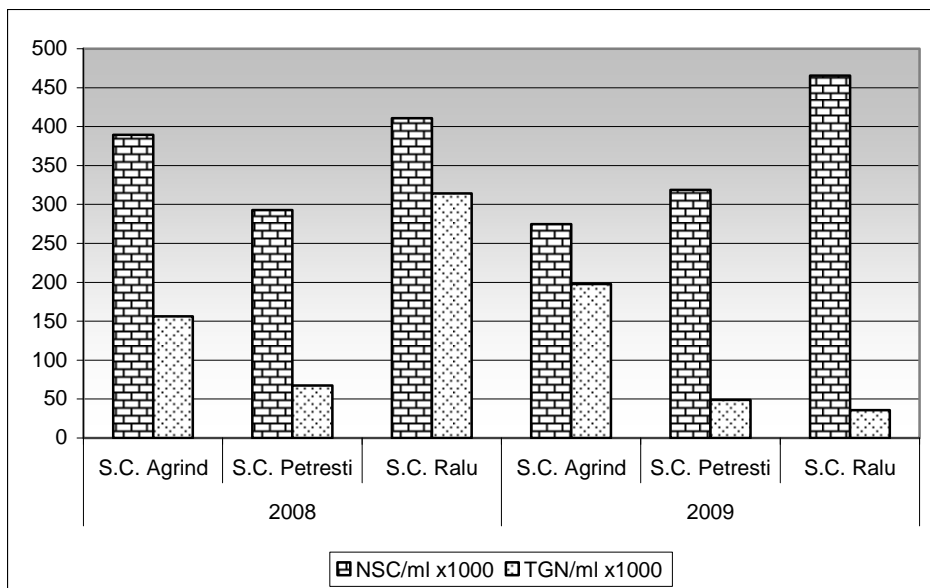


Fig.1 The average values of SCC and TGN obtained in three farms

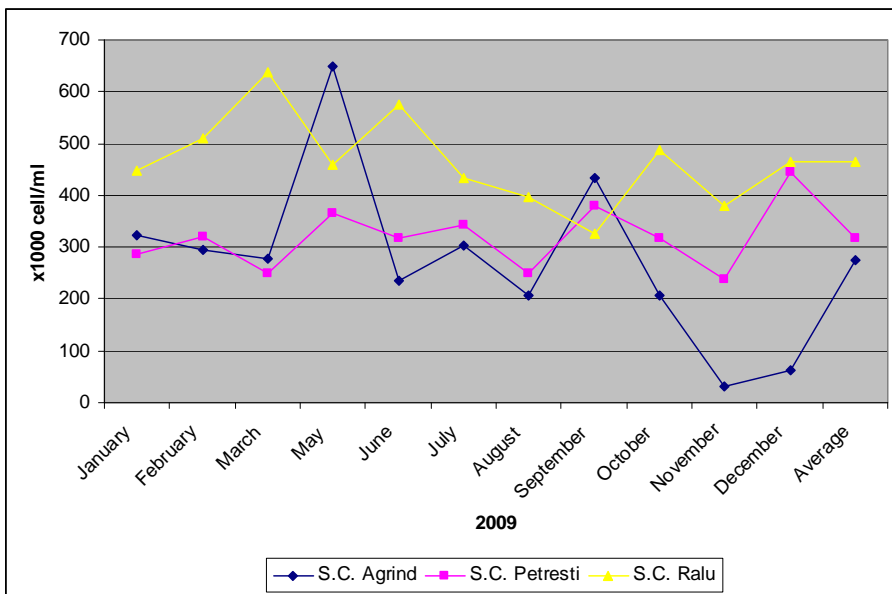


Fig.2 The dynamic of SCC in all three farms

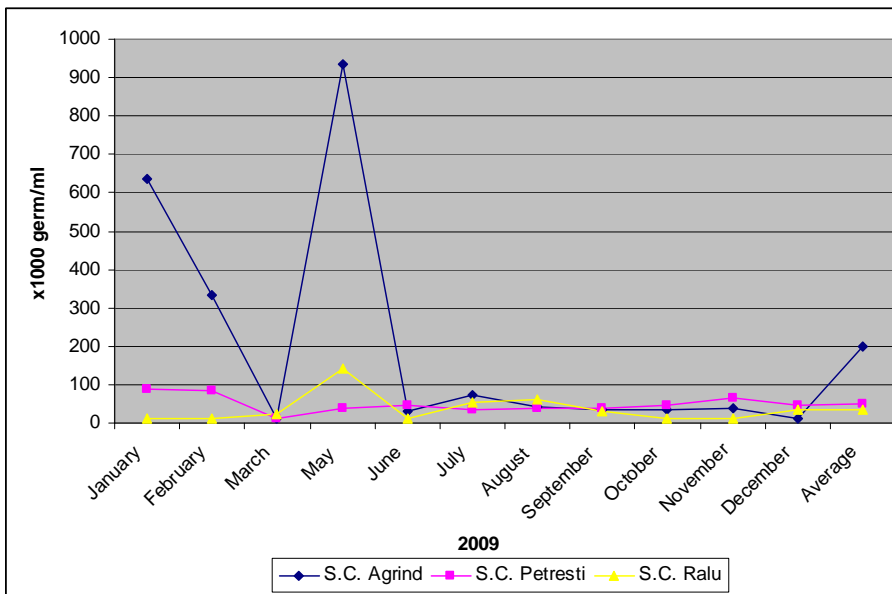


Fig.3 The dynamic of TGN in all three farms

Figure 2 and 3 shows the variation of SCC and TGN in all tree farms during the year 2009 thus can be see a good hygiene and sanitary quality of milk.

CONCLUSIONS

- total number of germs has been having values between 10x1000 germs/ml and 188x1000 germs/ml, and the number of somatic cells has been situated between

the values of 17000 NSC/ml and 483000 NCS/ml

- the values most diminishing of TGN was registered for milk's samples from S.C. Agricola farm from Petresti, of 62.000 germ/ml, with values between 10.000 germ/ml and 162.000 germ/ml.
- the values most diminishing of NSC was registered for milk's samples from S.C. Agrind farm, with average by 354,44 * 10³ cell/ml
- the milk that was tested from the three farms is accordingly to the EU standards which are revealing the application of a corresponding technology for the feeding, marinating and milking process.

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