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QUALITY AND ECONOMIC EFFICIENCY IN MILK PRODUCTION AT S.C.D.C.B. ARAD

CALITATE ŞI EFICIENŢĂ ECONOMICĂ ÎN PRODUCŢIA DE LAPTE LA S.C.D.C.B. ARAD

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The purpose of this work was to highlight the importance of milking system on the quality and efficiency of milk production. The works were performed on 400 Romanian Simmental - Fleckvieh type cow from Research and Development Station for Bovine Raising – Arad. Milking system used consists of a milking equipment type Bradulet 2 x 14, with which milk 28 cows simultaneously. Data obtained from this study revealed a significant influence of the milking system used on the quantity, quality and economic efficiency. As a result of applying this milking technology obtain a "clean" milk, creating the possibility of placement in the quality standards imposed by the EU.
Keywords: milking facilities, milk quality, economic efficiency

Introduction

Mechanical milking of cows in the milking parlor is special practice and increasingly taking into account that since 2009, under the law can not process the milk does not meet the standards imposed by the EU.

Centralize mechanical milking presents several advantages comparative with drum milking in barns, still practiced in many farms. The milk thus obtained is superior hygienic quality because it not comes in contact with milkman hand and with the environment (air in the shelter, in particular) (Colceri, 2004). Centralize mechanical milking provides a greater economic efficiency comparative with drum milking, because the productivity is increases with 2.5-5 times (Stanciu, 1999). Reduced milking time is because the four quarters that are milked simultaneously and also concomitant is used several milking devices. By mechanically milking is obtain a larger quantity of milk with a higher percentage of fat in milk, due to the reduction of milking time of cow, so that the milking overlapping with the maximum action of oxytocin.

Materials and Methods

The works were performed on 400 Romanian Simmental - Fleckvieh type cow from Research and Development Station for Bovine Raising – Arad. Milking

system used consists of a milking equipment type Bradulet 2 x 14, which milk 28 cows simultaneously. Technically, the facility is equipped with an electronic system for measuring the quantity of milk milking with automatic decoupling milking apparatus with alarm to overcome the number of accepted cells in milk (detection of mastitis) and pulsation system with stimopuls (5 regimes of pulsation with pre-stimulation and post-stimulation, ordered according to the electronic flow of milk). This system is perfectly adapted depending on the milk production of each individual.

The equipment is provided with data storage, with automatic identification of animals to the milking allowing: identification of animals, control and automatic recording into the computer of the milk quantity per milking animal with a 2-3% tolerance; detection of sub-clinical mastitis by conductibility of milk; electronic control of pulsation; stimulation of animals before milking, the possibility of carrying out the reports and file tracking and management of the farm, the possibility of automate identification of animals to the milking and the physiological status of animals (optimum time for insemination with an approximately of 99%), possibility of automate identification of the animal at the end of the lactation cycle (Irimescu, 2007).

The automation gives the possibility to have full information about: the number of cows milked, milked cow identification, health of milked cow, the period of gestation and gestation time until calving. Also in this structure are the facilities and a system for determining the physical-chemical composition of milk type *Lactostar* which detect the following parameters: fat, protein, lactose, minerals, fatty and dry cryoscopic point.

Device enable the monitored computer data or as a general report which presented data on the whole process of milking for all cows, or as individual reports, which presented data on each cow in part as follows: production of milk per day, per decade, per normal lactation and per total lactation on productive life. In addition to these parameters the equipment allows the monitoring of reproduction on the following: registration number of the cow in heat, registration number of the mounted cow, the used bull, registration number of cows diagnosed pregnant, registration number of the cow proposed for ablactation, data of probable birth, registration number of the cow with more than three insemination repeated, birth and number of products produced by sex, treatments.

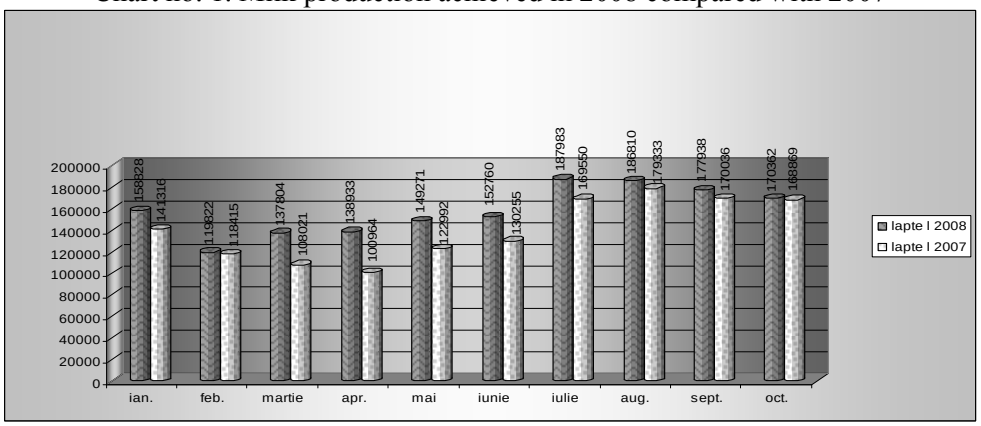
Results and Discussion

Data obtained from this study revealed a significant influence of milking on the quantity, quality and economic efficiency. Making a comparison between the quantity of milk produced in 2008, after putting in function of the new milking equipment and milking produced in 2007, when the milking was done in drum we get the following data:

- In the period January 2008-October 2008 we obtain a quantity of 1,580,511 liters milk compared with the same period in 2007 when we produced

1,409,751 liters, that is 11% more than in 2008 (with 170.760 liters more), according to the chart no. 1.

Chart no. 1. Milk production achieved in 2008 compared with 2007

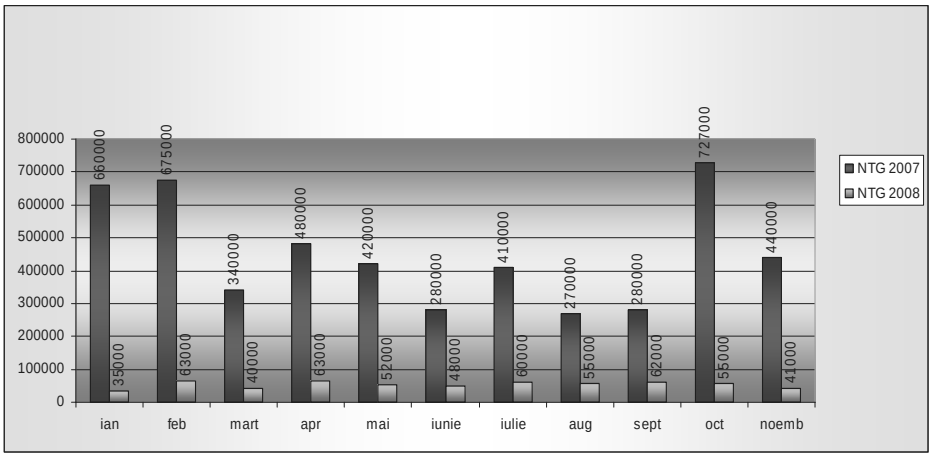


- -concerning to the content of milk in fat and protein results are as follows: during January-October 2008 the fat content in milk was 4.35% over the same period of 2007, when the fat content of milk was 4.06%; Referring to the protein content of milk during January-October 2008 this was of 3.32% and in the same period in 2007 was 3.29%, this indicator is more influenced by the milking.

Following milk quality in terms of hygiene, namely: the total number of germs / ml of milk and the total number of somatic cells / ml milk we found that:

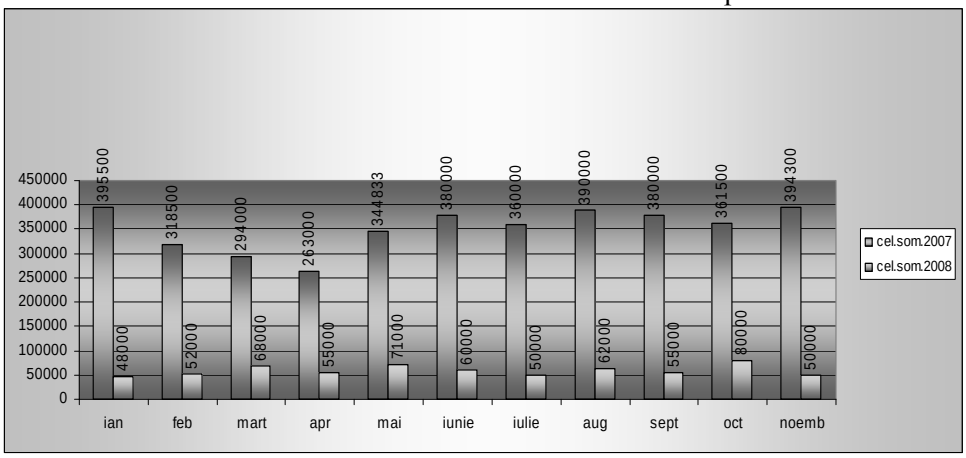
- -total number of germs / ml of milk during January-October 2008 had an average of 51,182 germs / ml milk, and in the same period in 2007 had an average of 452,909 germs / ml milk, which means with 88% more least in 2008 compared to 2007 (chart no. 2).

Chart no. 2. Number of germs in milk in 2008 compared with 2007



▪ -total number of somatic cells / ml of milk during January-October 2008 was an average of 59,181 somatic cells / ml milk, and in the same period of 2007 was averaging 352,876 somatic cells / ml milk, which means the 83% less in 2008 compared with 2007 (chart no. 3)

Chart no. 3. Number of somatic cells in milk in 2008 compared with 2007



As a result of applying of this milking technology can be obtain ”clean” milk, creating the possibility of placement in the quality standards imposed by the EU. In consequence of those could be collected the subvention accorded per liter of conformable milk. Thus in 2008 benefit achieved by increasing milk production and subsidies were 353,669 lei. In 2007 the quantity of milk produced was lower, subsidies were not granted and thus producing a loss of 329,638 lei.

The possibility of maintaining the health of cows decreased the percentage reform of cows with udder diseases by 14% in 2008, with the possibility to increase the number of heifers of high genetic value available to farmers to be purchased. Thus in 2008 the research station sold to farmers in different counties, a number of 99 copies heifers compared with 39 heifers that were sold in 2007. This was possible because the number of cows leaving the reform in 2008 was much smaller, just because of maintaining of health through early detection of cows with mastitis and treats them effectively. In this way the number of heifers needed for replacement cow’s reform was lower, with the possibility to sell farmers a greater number of heifers.

Analyzing the influence of milking system on economic efficiency we can show the following:

-increase the quantity of milk, implicitly and revenue;

- according of subvention per liter of conformable milk

-increased number of heifers available for sale;

-reduction of drugs through the early detection of diseases;

-increasing of labor-productivity by reducing the number of milkers.

Conclusions

Of those presented we can conclude that the used milking system has a major influence on the quantity and quality of milk and the economic efficiency of the farm. Of those listed, it is clear need to implement a modern technology for intensive milk production standards imposed by EU in farms with milk cows, so contributing to increase the benefit and welfare of the farmer.

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