

## RESEARCH ON THE NUTRITIONAL QUALITY OF MILK SHEEP FARM LOCATED IN BIHOR COUNTY

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### Abstract

*Need to increase milk production in sheep, is very high biological and economic value. Due to rich content in almost all the nutrients, especially essential amino acids, various enzymes, vitamins and minerals, as well as toning and antitoxic action, milk is one of the most comprehensive and necessary elements in both lambs and people food. At the same time milk also has a commercial value if the resulting surplus is used to manufacture various types of cheese or used as such, depending on your preference.*

**Key words:** sheep's milk, fat, protein, nutritional quality of milk

### INTRODUCTION

Nutrition affects both milk production and composition of product, quantity and quality affect the cheese

Milk fat concentration is positively correlated with the concentration of dietary fiber. PULINA and RASSU (1991) calculated the relationship between fat and neutral detergent fiber milk (NDF) in the diet ( $\text{fat}\% = 4,59 + 0,05 \text{ NDF}$ ;  $r=0,48$ ). However, this relationship is difficult to interpret because a higher concentration of NDF digestibility of food causes a reduction and a reduction in food intake which, in turn, leads to a reduction in milk production and further increase the concentration of fat of milk.

Extremely high doses can reduce intake of concentrated fiber and therefore reduce the time of rumination and rumen pH. This can lead to decreased milk production and reduced milk fat concentration (ODDY 1978; CHIOFALO et al. 1993) probably because they produce rumen acidaza (Ross et al 1988).

Protein content of the diet affects the amount and division of nitrogen substances from milk: Calderon-Cortes et al. (1977) reported that milk protein was significantly reduced when sheep were fed a diet deficient in protein. Robinson et al. (1974), Calderon-Cortes et al (1977), Robinson et al. (1979), Cowan et al. (1981) and PULINA et al (1995), all have shown that milk production and milk fat concentration can be increased by increasing the protein content of food. However in his study PULINA et al. (1995) increasing the amount of milk fat was accompanied by a decrease in the amount of protein from milk, which milk processing performance

deteriorated. In contrast, Sinclair and Gooden (1990), LYNH et al. (1991) and Ross et al. (1991) reported that high concentrations of protein in the diet can increase milk protein concentration with non protein nitrogen (PULINA et al. 1990) and especially urea (CANNAS et al. 1995) which lead to poor performance milk processing. Recently CHIOFALO et al. (1993) found a significant reduction in milk protein fed sheep dose when sugars and starches, consistent with similar findings of Murphy and O'Hara (1993), where dairy cows. PULINA (1990) noted that improving the quality of food can reduce the number of somatic cells in milk, especially towards the end of lactation (PULINA et al. 1992). This could be due to improved rumen functionality leading to a combined effect of increased production, resulting in a decrease in somatic cells and a slowdown in production of mammary cells. The sheep is more important than the amount of protein in its quality food because microorganisms are able to synthesize browning large quantities of amino acids, even on non-proteinaceous N sources, provided that non-protein N does not exceed one third of total nitrogen of ration (D. Mierlița, 2001).

#### MATERIAL AND METHOD

Milk samples were analyzed by collection from different units, households and herds, in terms of nutritional quality of milk, as reflected by its content of fat, protein, lactose and dry substance.

The techniques used are standard except that the fat and protein was used in a device LACTOSCOPE scheduled for sheep's milk.

#### RESULTS AND DISCUSSIONS

The results are presented in Table 1.

*Table 1.*

The average content of fat, protein, lactose and dry substance in the milk samples

| number of samples | fat %                  | protein %              | lactose %                | dry substance %            |
|-------------------|------------------------|------------------------|--------------------------|----------------------------|
| 125               | 7,61±0,16<br>(5,2-9,1) | 5,34±0,12<br>(4,2-6,4) | 4,64±0,14<br>(3,81-5,32) | 18,31±0,33<br>(15,9-19,80) |

The date obtained are comparable with those reported by other autors. In this way ,MAN C. and col.(2002) reported that milk sheep from Țigaie breed at SCZ Jucu had 7,6±0,16% fat, 5,3±0,137% proteins, 4,62±0,13% lactose and 18,4±0,34% SU. At the same breed,at SCA Turda, all components were lower,and in small effective of sheep at population

households the fat was contained between 6,8 – 8,6%,protein 5,0 – 5,84%,lactose 4,68% and SU 16,0 – 18,5%.

He also found a big variability from farm to farm and the months of lactation. In this context, we grouped the results obtained on nivel by alimentation of sheep in farms and we took into account the month of lactation and we realized that two factors have a big influence over the nutritive quality of sheep milk.

Influence of feeding sheep on nutritional quality of milk

The period influence of lactation over the nutritive quality of milk In three holdings of sheep ,has studied the evolution of the percentage of milk fat and protein ,in function to the period of lactation, making determinations on samples collected average May, June, July and August.

Results are shown in Table 2.

*Table 2*

The composition of sheep milk, depending on the level and type of forage

| level and type of forage                                                           | N  | Milk ingredients % |         |             |
|------------------------------------------------------------------------------------|----|--------------------|---------|-------------|
|                                                                                    |    | Fat                | Protein | S.U.        |
| Summer: field + 0,200 kg concentrates;<br>Winter: hill hay + 0,150 kg concentrates | 6  | 7,45-9,16          | 5,2-6,2 | 17,91-19,32 |
| Summer: exclusive field;<br>Winter: some hay, straws, corn stalks, no concentrates | 24 | 5,12-7,10          | 4,2-5,4 | 15,9-18,3   |

It appears that the main components of milk depends on month of lactation, values increased continuously from beginning to end of lactation, which is proven and research undertaken in our country V. Taft (1998, 1997), POP A. (1983), PĂDEANU I. (2000, 2001) and abroad OLIVETTI (1988), PULINA (1990, 1991), CAPPIO-BORLINO (1992), etc.

Regarding the importance of nutrition in obtaining a chemical composition rich milk, bibliographic data are even more numerous. Thus, PULINA and RASSU (1991) states that milk fat is positively correlated with the concentration ratio fibers,  $r = +0.48$  finding report.

The results are presented in Table 3.

*Table 3*

The average of fat and protein content depending on the months of lactation

| Exploatația      | Număr probe | Conținutul în grăsime (%) | Conținutul în substanțe proteice (%) | Lunile din perioada de lactație |
|------------------|-------------|---------------------------|--------------------------------------|---------------------------------|
| Husasău de Tinca | 27          | 6,9                       | 5,6                                  | Mai                             |
| Carei            | 27          | 6,8                       | 5,9                                  |                                 |
| Oradea           | 26          | 6,1                       | 6,2                                  |                                 |
| Husasău de Tinca | 27          | 6,9                       | 6,5                                  | Iunie                           |
| Carei            | 27          | 7,3                       | 6,4                                  |                                 |
| Oradea           | 26          | 7,8                       | 6,8                                  |                                 |
| Husasău de Tinca | 27          | 7,9                       | 6,3                                  | Iulie                           |
| Carei            | 27          | 8,4                       | 6,6                                  |                                 |
| Oradea           | 26          | 8,3                       | 6,6                                  |                                 |
| Husasău de Tinca | 27          | 8,9                       | 6,9                                  | august                          |
| Carei            | 27          | 9,1                       | 6,7                                  |                                 |
| Oradea           | 26          | 9,5                       | 6,9                                  |                                 |

The deficit diet in protein causes the semnificative reduction of the proteic content of milk (ROBINSON și col., 1974, 1979). The results obtained in farm which use in sheep food concentrated and hay of lucerne, are in this way explained, comparative with the farms where the sheep are fed unilaterally, with straw, corn cobs, poor pasture, with protein deficit of ration comprised between 40-60%.

## CONCLUSIONS

Refering to the nutritive quality of sheep milk and some of the factors of influence you can depict the following:

The average of 45 probes of milk recolting from over 60 farms, herds, the ovine from the beginning to the end of the period of lactation is the following:

- the fat  $7,61 \pm 0,16\%$  whit limits between 5,2 – 9,1%;
- the protein  $5,34 \pm 0,12\%$  whit limits between 4,2 – 6,4%;
- the lactose  $4,64 \pm 0,14\%$  whit limits between 3,81 – 5,32%;
- dry substance  $18,31 \pm 0,33\%$  whit limit between 18,31  $\pm$  0,33%

These values are comparable with the data from the bibliography and in general are the same with the technological conditions and the breed exploited in the styding farms.

The main factors of influence of the nutritive quality of the sheep milk are the alimentation level and the lactation. from our research results follow:

in the ovin farms with the close alimentation of the requirements under the aspect of su,un,pd,you can have fat a good milk ,of 7,45-9,16%,after the average of the 425 tests recolts in 2 years in 60-70 ovin farms. the percentage of protein was of 5,2-6,2% at the superior limit of the exploited breed potential and su have values of 17,91-19,32%.

- in farms with deficit alimentation,with of 10-40% un and 30-60% pd,the milk composition was with weak fat 5,12-7,10% proteins 4,2-5,4%,su 15,9-18,3%.

In the time of lactation, the bigger production is the first 4-6 weeks.but the percentage of fat,of proteins,and su,grows with lactation,especially in june,july,august,when the values are bigger than at the beggining of lactation.

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