

RESEARCH ON THE INFLUENCE OF SEASON ON QUANTITATIVE AND QUALITATIVE MILK BUFFALO

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Abstract

Within the family Bovidae, buffaloes belonging to three genera: *Bubalus*, *Syncerus*, and *Anoa*. The only genre that led to the emergence of domestic is *Bubalus*, of the types of marsh and freshwater. In our country, increase the coastal type, which is also called the Mediterranean. In terms of milk production, buffalo, cattle are distinguished by the quantity of milk less, during lactation reduced the percentage of fat greater than 123 %, protein content 25% higher.

The purpose of this study was to highlight the influence of season on the quantity and chemical composition of buffalo milk. To make qualitative measurements using a portable device. Animals subject to our observation from households located in the counties of Olt and Teleorman. Buffaloes were different ages, different lactations that were fed different food-summer season was the administration of the green table, and winter forage nutritive value medium fibrous and sometimes small amounts of concentrates. Births were conducted during the fall, that in August-October. In autumn-winter season, the fat content of milk is high, increasing continuously until the end of lactation. Protein content decreases during the winter months and begins to rise with the onset of spring. The amount of milk showed a peak in the first month of lactation-winter season, after which there was a steady decline.

Key words: season, milk fat, protein feed

INTRODUCTION

In Romania, the buffalo were identified from IV-V centuries. The first written information relating to the increase relates to the village Porumbacu buffalo, from the region of Fagaras. The Romanian Plain and Dobrogea, buffalo were brought by the Turks in the Balkans. In terms of the importance of buffalo milk, it has been consumed and prepared for centuries in the Mediterranean. Compared to cows milk, buffalo milk has a higher content of dry matter (17.5%), average fat content is 7.8%, 4.25% protein and 4.9% lactose. The content of mineral salts, calcium and fosor that is higher than in milk cow. De over time found that buffalo milk has become the favorite not only because of the higher composition of cows, and because of taste. [3].

Performance in milk production are related to genetic factors, physiological and environmental. In this paper we propose to study the influence of season on milk production.

MATERIAL AND METHODS

The material studied was the 37 buffaloes at different lactations. Animals breed buffaloes are reared in Romanian and two counties of the south, Olt and Teleorman respectively. Structure in lactating buffalo herd is as follows: 13.5% are buffaloes in first lactation, 27% second lactation, 24% in the third lactation, 19%, buffaloes in the fourth lactation and 16, 5% buffaloes at lactations V-VII. Quantitative and qualitative parameters of milk were analyzed in the four seasons, so as to identify differences between them. Milk samples were analyzed using a portable-Ekomilk. The resulting data were stored and processed by methods known statisitic.

RESULTS AND DISCUSSION

The physiological and productive season influence cardiac activity, respiratory activity, the quality and quantity of milk. Extensive research conducted over time reveal the relationship between the chemical and quantitative characteristics of milk and

calving season. The analysis performed in buffalo milk, collected from households in the counties of Olt and Teleorman have found that: the average percentage of fat showed the highest value in winter (average - 7.78%). The lowest average fat content was recorded in summer. It is noted that samples are homogeneous, the coefficient of variability with values ranging between 5.23% and 6.21% (Table 1). Comparing the results with those of other authors, we find that in 2009, Aurelia Coroian et al. led to the farm buffaloes Meschendorf fat percentage values ranging from 7.88% in winter and 6.96% in the summer. [2]. Livia Vidu et al. were determined in the autumn, the buffaloes in the villages Dragus and Cincu Brasov county averages of 7.79% and 7.71% [4]. The buffaloes in Bulgaria the average fat

content is 7.04%, Egypt 6.5 to 7.0% and Indian Murrah breed average fat content is 7.2% [1]. Protein content is variable values from one season to another. Thus the highest protein content recorded in the winter months when it first lactation buffaloes (4.69%). Regarding the literature, it was found that the values we obtained fall in the average literature in our country. The buffaloes in Turkey, the average percentage of protein is within the range 4.2 to 4.6% [1]. Lactose, is an important parameter in processing of milk, which gives flavor to products. The buffaloes studied by us, the lactose content ranged from 4.90% in autumn and up to 4.78% in the winter. Aurelia Coroian et al. In the study conducted in Transylvania led lactose highest values throughout the autumn (4.82%).

Table 1 The qualitative parameters of buffalo milk in households in southern Romania, according to season

Parameter	n	Season				
		Winter	Spring	Summer	Autumm	
Fat(%)	37	$X \pm S_x$	7,78±0,05	7,60±0,04	7,02±0,02	7,70±0,05
		V%	6,11	5,23	6,21	6,09
Protein (%)	37	$X \pm S_x$	4,69±0,01	4,50±0,02	4,62±0,02	4,52±0,04
		V%	2,56	3,09	3,02	2,69
Lactose (%)	37	$X \pm S_x$	4,78±0,05	4,81±0,07	4,82±0,06	4,90±0,04
		V%	1,98	1,87	2,02	1,96

In Figure 1 are represented development of fat, protein and lactose according to the season in buffaloes in the South.

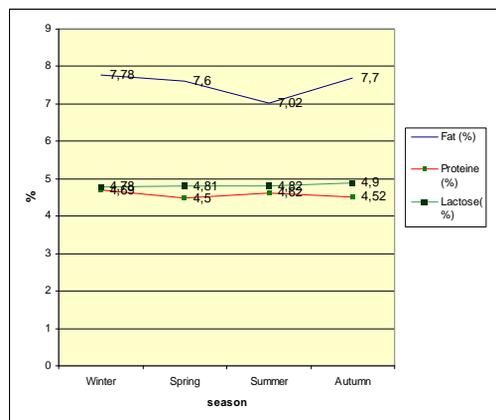


Fig. 1 Evolution of quality parameters of buffalo milk in households in southern Romania, according to season

Table 2 shows the evolution of fat, protein and lactose in the milk of buffalo and older. Graph 2 shows the trend of increasing fat, protein and lactose.

from first lactation and up to fifth lactation and older. Graph 2 shows the trend of increasing fat, protein and lactose.

Table 2 Qualitative parameters of buffalo milk in households in southern Romania, depending on the number of lactation

Lactation	n		Qualitative parameters		
			Fat (%)	Protein (%)	Lactose (%)
Lactation 1	5	X±S _x	7,11±0,08	4,30±0,06	4,70±0,09
		V%	2,35	6,12	3,23
Lactation 2	10	X±S _x	7,20±0,07	4,38±0,02	4,75±1,01
		V%	4,56	2,23	2,24
Lactation 3	9	X±S _x	7,30±0,05	4,52±0,04	4,85±0,07
		V%	6,11	2,25	3,42
Lactation 4	7	X±S _x	7,98±0,03	4,61±0,03	5,01±0,08
		V%	6,24	5,22	
Lactation 5 and over	6	X±S _x	8,20±0,04	4,70±0,02	5,30±0,08
		V%	8,24	5,24	6,12

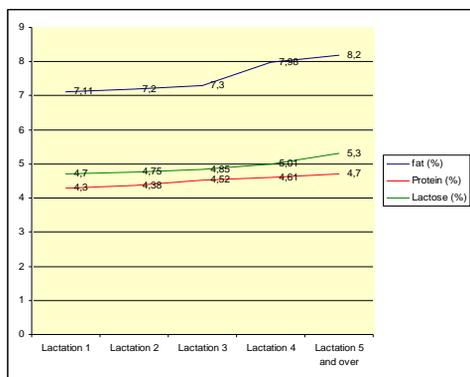


Fig. 2 Development qualitative parameters of buffalo milk in households in southern Romania, depending on the number of lactation

determined 1324 kg. Also, we determined a high coefficient of variation (30.58%), which indicate a less homogeneous population, there are large variations in production of milk. These values are close to those determined by various authors at the national level. Comparing the results with those determined in the world, it is observed that buffaloes in Romania are much lower amounts of milk (Jafarabadi -2151 kg milk/319 days lactating Nili Ravi -1820 kg milk/305 day and Murrah -1675 kg milk/305 days lactation) [3].

In terms of quantity of milk quantity of milk made by total lactation buffaloes studied we found the following: onset of lactation is done in late fall and early winter production growth achieved by the fourth month, then begin to decline; peak lactation is achieved during the transition from winter to the spring, as a result of births that are in the majority of autumn-winter season (Fig. 3), the average total duration of lactation is 275 days and the average quantity of milk is

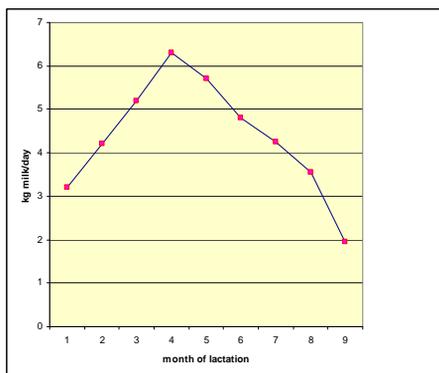


Fig. 3 Evolution of lactation curve in buffaloes in southern Romania

CONCLUSIONS

This study was done on a herd of 37 buffaloes reared in environmental conditions in southern Romania. Overall, it was observed that the subject of this study calved buffaloes in autumn-winter months and a maximum phase of the lactation curve was reached in the early spring. Milk analysis revealed the existence of variations in the content of fat, protein and lactose in the milk of buffalo to the season. Depending on the age buffaloes have noticed an increasing trend in nutrient content in milk from first lactation and multiparous animals at up to fifth lactation and older.

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