

RESEARCH REGARDING THE LACTATING PERIOD OF THE BITCH

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Abstract

Breastfeeding shows for all species the most important period for both the female and the new generation of products. Milk produced by a bitch, by his the qualities it is, offers puppies a considerable growth rate. Research conducted on 10 female breeds: German Shepherd Dog, Caucasian Shepherd, Labrador and West terrier showed qualitative differences in colostrum and matern milk. The differences were both studied the chemical composition of each race and in different periods of lactation. Protein percentage was higher in colostrum at 8.1% in female German Shepherd breed and lowest 3.7% in West terrier breed. Regarding the entire period of lactation, the highest percentage of protein was recorded at Caucasian Shepherd females (7.5%) and the lowest breed West terrier (3.5%). Correlations between body weight and quantity of milk is strongly positive, with a value of 0.72, and also the correlation between the amount of milk and prolificacy was positive, being +0.61.

Key words: Breastfeeding, bitch, chemical composition correlation

INTRODUCTION

Proper conduct of the function of reproduction is an essential component of growth in dogs. Success is usually assured if the farmer provides all the factors that influence the function and parameters seeks parameters that influence reproductive performance.

The physiological lactation must ensure both quantity and quality of milk for new born. Milk produced by bitches in these periods is influenced by many factors requiring attention from the breeder [2].

Milk secretion is a complex process under neurohormonal dependence, making regulation of mammary gland activity is the central nervous system. Normal operation of the neuroendocrine system to reflect the normal course of lactation.

The bitch is generally a good mother, and lactation require its body, so attention must be permanent keeper, and intervention in case of need to do immediately [1].

MATERIAL AND METHOD

The main goal was to determine the quality and quantity of milk produced indirectly as many races in five different

body weight and reproductive ability. Biological material was composed of 10 females of races: Caucasian Shepherd, German Shepherd, Golden Retriever, Labrador and West terrier, 3 years of age, reared under the same conditions and with the same care.

Main indices were determined breeding, milk production was calculated the total average and the first four days were fed females. He pursued and quality of colostrum and milk samples collected in different periods in time: 2 days, 10 days, 25 days and 45 days of lactation.

Milk samples were analyzed by 98-2A ULTRA ECOMILK device that allowed the determination of the percentage of fat, protein, dry matter, pH and density of milk.

Total milk production was calculated using the equation:

$$Pt = G [C + 0.1 (N-4)] [2]$$

where, G = female weight

C = coefficient applied by the weight of female

N = no. chicken breast

C = 1.6 for females weighing less than 8kg

C = 1.8 for females weighing between 10-25 kg

C = 2.0 for females weighing over 25 kg

Average milk production was calculated with the equation $P_m = P_i \cdot 0,4$ [2]

and for milk production in the first four days was used formula based on the relationship

$$p_4 = \frac{p_i}{45} [2].$$

Knowing that there is mutual dependency between variables was determined Allied correlation coefficient (r) between the quantity of milk, body weight and prolificacy of females. The data were statistically analyzed and compared with those in the literature.

The correlation coefficient was calculated based on the relationship:

$$r_{xy} = \frac{\sum xy}{\sqrt{\sum x^2 \cdot \sum y^2}} [5]$$

Error correlation coefficient was established

$$s_r = \frac{1 - r^2}{\sqrt{n - 1}} [5]$$

RESULTS AND DISCUSSIONS

Reproduction smoothly gives indications on the health of the female as well as a good management. The main breeding indicators derived from biological material studied is presented in table 1.

Table 2 Total amount of milk, medium, and the first 4 days of lactation produced by the strains analyzed bitches

Specify	Caucasian Shepherd	German Shepherd	Labrador	Golgen Retriever	West Terrier
Total quantity of milk (kg)	112,8	74,7	61,6	51,2	8,7
The average quantity of milk (kg)	4,51	2,98	2,46	2,04	0,34
Quantity of milk in the first four days (kg)	2,50	1,66	1,36	1,13	0,19

The data presented show that large-breed females produce a larger quantity of milk: as Caucasian Shepherd realized total lactation milk and 112.8 kg Terrier West race over the same period produced 8.7 kg. The average amount of milk and what he achieved on the four days have made the same differences.

Table 1 Indicators obtained from breeding females studied

Specification	U.M.	Value
Total females	heds	12
Females that have parturition	Heds	10
No. puppies calved	Heds	74
Puppies live birth	Heds	66
Puppies farrowed dead	Heds	8
Puppies deaths between 0-48 hours	Heds	4
Puppies dead- 48ore - days	Heds	2
No. weaned puppies	Heds	58
Puppies weaned per female	Heds	5,8
Prolificacy	Heds	7,4
Death rate	%	12,1
Puppies dead after calving	%	9,1
Fertility	%	83,3

The data presented demonstrate reproductive activity is appropriate, the indicators do fall within normal limits. Percentage than the 12.1% mortality after parturition demonstrates that female have benefited from a good feeding and care both before and after parturition.

Analyzing further the amount of milk produced by dams throughout the lactation period are differences between subjects are analyzed according to the number of milking puppy and breed. Data are presented in table 2.

Immediately after birth the mammary gland to secrete colostrum is essential to put in the first 2-3 days of life [4]. Table 3 shows the chemical composition of colostrum registered breeds studied.

Table 3 Chemical composition of colostrum from females of the studied race

Race	Fat%	Protein%	S.U.	pH	Density	Water
German Shepherd	6,5	8,1	24	5,98	1,23	76
Caucasian Shepherd	9,5	5,2	25	6,13	1,32	75
Golden Retriever	10,2	6,9	22,4	6,03	1,01	77,6
Labradorul	10	6,8	23,4	6	1,03	76,1
West Terrier	7,5	3,7	25,5	5,87	1,02	74,5
Average	8,42	5,97	24,22	6,0	1,14	75,77

Analyzing the data in table 3 we see that there are differences in the chemical composition of colostrum breeds analyzed. The average percentage of fat was 8.42% with a range of 10.2% from 6.5 retriever Golden breed German Shepherd. Protein percentage varied from 3.7% to 8.1% and Terrier West race at the German Shepherd. Colostrum is produced by the bitch of the

product exceeded the sow and rabbit. This is supported by the fact that doubling the weight as needed for 9 days, 15 days later for the piglets, and only 6 days for rabbits [3].

Continue to follow the evolution of the chemical composition of milk of a bitch in different periods of lactation. The results are presented in the following table.

Table 4 Chemical composition of bitch's milk in various periods of lactation

Specification	Chemical composition											
	10 days				25 days				45 days			
	% Fat	% Protein	S.U	Water	% Fat	% Protein	S.U	Water	% Fat	% Protein	S.U	Water
Caucasian Shepherd	8	5,1	25,5	75,1	5,1	7,5	25	76	8,3	7,5	24,3	75,7
German Shepherd	5,1	7,5	25	76	8	5,1	25,5	75,1	4,9	6,3	27,2	72,8
Golden Retriever	9,5	6,9	23,5	77,5	9,5	6,9	23,5	77,5	7,4	6,9	25,3	74,7
Labrador	9,1	6,9	23,5	75,5	9,1	6,9	23,5	75,5	5,9	7,4	25,3	74,5
West Terrier	7,5	6,1	23	74,5	7,5	6,1	23	74,5	4,9	3,5	20,1	79,9

Analyzing data from the table, we can highlight some aspects, namely:

- bitch of milk components, fat percentage showed wide limits of variation in all three periods considered, but if the races studied. Extreme limits were 4.9% Terrier West race in the 45 days of lactation, amounting to 9.5% recorded at Golden retriever race.

- the percentage of protein but was also the amplitude of variation was lower (3.5% in West race and the maximum 7.5 Terrier breed German Shepherd).

- towards the end of lactation in all races studied, an increase in the quantity of dry matter.

Determine the chemical composition of milk and other features of the process of growth of pups during lactation. The observed differences in terms of quality milk can be explained primarily by anatomical and physiological differences between the breeds studied.

Correlation between the calculated total milk production and prolificacy was $0,26 \pm 0,03$, insignificant in statistical terms.

The other pair of characters, the amount of milk and body weight was strongly positive and the correlation coefficient had a value of $0,72 \pm 0,16$.

The correlation between body weight and prolificacy was $0,29 \pm 0,03$, positive, but statistically non significant.

CONCLUSIONS

Research has shown that breastfeeding is important for one moment, is influenced by many internal and external factors.

Female reproductive function normally study was conducted showing that their health was corespunzătoare and management has been properly applied.

The average total amount of milk and the first 4 days of lactation was different according to race and according to the weight of females who have given birth.

Chemical composition of milk showed differences in all analyzed periods and in all races studied with different amplitudes.

The correlation coefficient between the estimated total quantity of milk, body weight and prolificacy were positive with varying degrees of significance.

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