

EVOLUTION OF THE MAIN BLOOD INDICES IN TSIGAI FATTENING SHEEP EVOLUȚIA PRINCIPALILOR INDICI SANGVINI LA OVINELE DIN RASA ȚIGAIE SUPUSE ÎNGRĂȘĂRII

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REZUMAT

Au fost efectuate cercetări asupra ovinelor din rasele Țigaie, Merinos de Cluj și Corriedale. În vederea stabilirii metabolismului rației au fost determinate principalele constante sangvine: glicemia, colesterolul, proteinele totale, albuminele, globulinele, gamma globulina, creatinina, ureea și fierul. De asemenea au fost stabilite principalele tipuri de hemoglobine la tineretul ovin studiat cu ajutorul electroforezei pe hârtie. Analiza tipurilor de hemoglobine a demonstrat faptul că la ovinele din rasa Țigaie predomină tipul B, iar la Corriedale și Merinos de Cluj au fost identificate tipurile AB și B, predominând tipul B și în aceste cazuri. Principalii parametrii biochimici se încadrează în limitele fiziologice normale, evidențiind un echilibru nutrițional în ceea ce privește factorii nutritivi.

CUVINTE CHEIE: **indici sangvini, electroforeză, hemoglobină**

ABSTRACT

Research was performed on Tsigai, Merino of Cluj, and Corriedale breeds. The main blood constants: glycemey, cholesterol, total proteins, albumins, globulins, gamma globulin, creatinine, urea and iron, were determined in order to establish the feeding metabolism. Types of hemoglobin in young studied sheep also were determined, using electrophoresis on paper. The analyses of hemoglobin type performed on experimental groups show that in Tsigai prevails B hemoglobin type. Both B and AB hemoglobin types were identified in Corriedale and Merino of Cluj, prevailing B type. The main biochemical parameter frames in the normal physiological limit, emphasizing the diet balance in all nourishing principles.

KEY WORDS: **blood indices, electrophoresis, hemoglobin**

DETAILED ABSTRACT

Research concerning the main blood constants (glicemy, cholesterol, total proteins, albumins, globulins, gamma globulin, creatinine), was performed on Tsigai, Merino of Cluj, and Corriedale breeds. Types of hemoglobin in young studied sheep also were determined, using electrophoresis on paper. The analyses of hemoglobin type performed on experimental groups show that in Tsigai prevails B hemoglobin type. Both B and AB hemoglobin types were identified in Corriedale and Merino of Cluj, prevailing B type. Genetic analyze of energetic parameters (table 1) shows normal limits for glicemy values. This emphasizes the normal glucide content in fodder. Cholesterol also frames in normal limits, considering the young sheep age, its values being lower than values cited by literature data.

The urea and creatinine, representing the main nitrogen excretion products are found in blood, and eliminated in urine. The main biochemical parameter frames in the normal physiological limit, emphasizing the diet balance in all nourishing principles.

INTRODUCTION

Genetic polymorphism of blood proteins in sheep has great importance because in selection practice the biochemical genetic variations can complete the blood groups for the increasing of certitude in the individuals origin testifying, and even their applying as gene markers with the aim of establish the paternity.

The electrophoresis research done in sheep have shown that differences were recorded in breeds concerning the genetic types as well as the gene frequency and genotypes for a high number of proteins.

HbA, HbB, and HbAB normal hemoglobin types were identified in sheep considering the migration speed into electrophoretic field (4).

The hemoglobin types are determinant for a series of allele placed in a single locus on chromosome and which posses codominant heredity. Due to this fact all the three genotypes AA, AB, BB (5) were studied. The investigations performed in this field demonstrated that the frequency of these hemoglobin types is different from one breed to another.

The physiological and biochemical differences between individuals, which had different types of hemoglobin, offer to the individuals with HbA a selective advantage, mostly in mountain environment.

MATERIAL AND METHOD

Tsigai, Merino of Cluj, and Corriedale pure bred fattening young sheep represented the studied biological material.

The experiment was performed on 6 groups, 75 animals each. They were kept in the same environmental conditions. A total mixed diet was used (70% hay, 30% concentrates – 10% wheat, 10% maize, 5% sun-flower, 5% PVM)

In order to establish the feeding effect on metabolism, the main blood constants: glicemy,

cholesterol, total proteins, albumin, globulin, gamma globulin, creatinine, urea, and iron were determined. The hemoglobin types in studied young sheep were also determined using paper electrophoresis. Classical chemical methods were used for laboratory analyses.

RESULTS AND DISCUSSIONS

Hemoglobin type analyze in Tsigai young sheep from experimentally groups shows that B type hemoglobin prevails, and this confirm the investigations performed by the research group from A.R.S. Turda, district of Cluj, which is the provider of the biological material.

Corriedale and Merino of Cluj young sheep show B and AB hemoglobin types, but prevailing B type in experimental groups.

Considering the main blood constituent literature (1, 2, 4) mention the existence of some differences between breeds. Table 1 shows the mean values of blood constants in young sheep in fattening phase.

Genetic analyzes of energetic parameters (table 1) shows that glicemy values are in the normal limits, and this emphasizes the normal fodder glucide contribution. Cholesterol also frames in normal limits, considering the young sheep age. The recorded values were lower as compared to the values cited by literature.

The urea and creatinine, representing the main nitrogen excretion products are found in blood, and eliminated in urine.

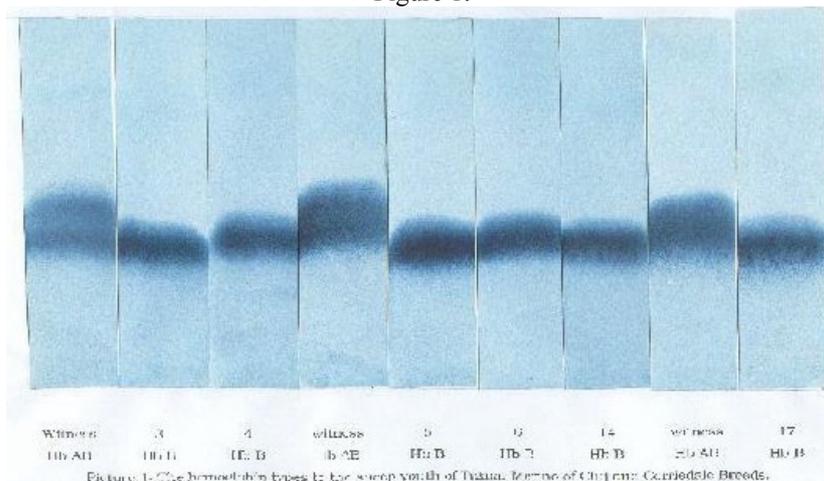
CONCLUSION

Analyze of all biochemical parameters shows that their values are in normal physiological limits, and also that the provided feed are well balanced in all nourished principles. Also, the blood constant values are relative closely to those cited by literature for this age category.

Table 1. The mean values of the blood constants in young fattening sheep by breeds and variants (%)

Issue Specificare	M.U	Breed and variant Rasa și varianta					
		Tsigai Țigaie		Merino of Cluj Merinos de Cluj		Corriedale Corriedale	
		I	II	I	II	I	II
		$X \pm s_x$	$X \pm s_x$	$X \pm s_x$	$X \pm s_x$	$X \pm s_x$	$X \pm s_x$
Glicemy Glicemia	mg	59.00± 2.17	63.00± 5.60	56.60± 2.46	64.00±3. 61	52.80±2. 80	54.60±3. 60
Cholesterol Colesterol	mg	47.20± 2.26	48.00± 2.66	51.60± 4.30	46.80±2. 81	48.40±2. 37	46.00±3. 03
Total proteins Proteine totale	g	5.09±0 .29	5.83±0 .23	5.32±0. 10	5.20±0.1 6	5.63±0.2 5	5.51±0.2 2
Albumins Albumine	g	2.70±0 .16	2.85±0 .15	3.23±0. 05	2.90±0.1 1	2.71±0.1 0	2.81±0.1 6
Globulins Globuline	g	2.46±0 .28	2.33±0 .08	2.09±0. 09	2.28±0.2 5	2.92±0.3 0	2.70±0.3 4
γ - globulins γ - globuline	g	0.75±0 .03	0.76±0 .03	0.72±0. 03	0.74±0.0 3	0.91±0.0 2	0.85±0.0 4
A/G	g	1.17±0 .18	1.23±0 .10	1.58±0. 07	1.37±0.2 0	1.00±0.1 4	1.14±0.0 2
Urea Uree	mg	39.80± 2.13	28.20± 1.82	31.00± 1.51	24.40±1. 05	37.00±1. 67	29.00±3. 60
Creatinine Creatinină	mg	0.62±0 .02	0.64±0 .02	0.63±0. 01	0.78±0.0 3	0.68±0.0 1	0.70±0.0 3
Iron Fier	mg	161.00 ±21.59	154.80 ±12.78	133.00 ±22.43	136.80±1 3.69	123.60±1 3.82	119.00±1 2.28

Figure 1:



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