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HAEMOGLOBIN VALUES IN SHEEP AGED 6–9

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Nowadays, in our country there is a considerable number of sheep and goat. They are grazing and raised in a stockyard system in relatively not big herds and the consequences are shown in damages and economical loss caused by many diseases, especially parasites. This study consists of evaluation of the amount of haemoglobin in sheep aged of 6 to 9 years. 40 sheep were studied. Animals were selected by random choice from the animals in a slaughterbouse (near the Veterinary Medicine Faculty). The blood taken from the ear at around 8 o'clock in the morning and was treated with EDTA anticoagulant. The evaluation of the amount of haemoglobin was done with the Sahli haemometer. The animals were divided in 4 groups to inspect the values of haemoglobin; 6 of them were aged 6, 12 of them were aged 7, 15 were aged 8 and 7 of them were aged 9. Presented in percentage, 15% were aged 6, 30% of sheep were aged 7; 37.5% were aged 8 and 17.5% were aged 9. Different ages of sheep in this study have presented different values of haemoglobin. The lowest haemoglobin level results for sheep aged 7, where the value is 5.25±0.86 g/dl, and the highest haemoglobin level results for sheep aged 9, where this value is 5.92 ±0.90 g/dl.

Key words: sheep; age; parasite; haemoglobin

ВРЕДНОСТИ НА ХЕМОГЛОБИН КАЈ ОВЦИ НА ВОЗРАСТ ОД 6 ДО 9 ГОДИНИ

Денес во нашата земја постои прилично голем број овци и кози. Тие се напасуваат и одгледуваат во релативно не многу големи стада и последиците се огледаат во штети и економски загуби предизвикани од многу болести, особено од паразити. Во оваа студија е извршена процена на количината на хемоглобин кај овци на возраст од 6 до 9 години. Беа проучени 40 овци. Животните беа одбрани по случаен избор од животните во кланица (близу Ветеринарниот факултет). Крвта беше земена од увото околу осум часот наутро и беше третирана со антикоагулансот EDTA. Проценатa на нивото на хемоглобин беше извршена со хемометар на Sahli. Испитуваните животни беа поделени во 4 групи. Шест од нив беа на возраст од 6 години, 12 на возраст од 7 години, 15 на возраст од 8 години и 7 на возраст од 9 години. Презентирано во проценти, 15% беа на возраст од 6 години, 30% на возраст од 7 години, 37,5% на возраст од 8 години и 17,5% на возраст од 9 години. Овците na различна возраст во оваа студија покажуваа и различни вредности на хемоглобин. Најмала вредност на хемоглобин беше забележана кај овците на возраст од 7 години, кај кои изнесуваше 5,25 ± 0,86 g/dl, а највисока вредност на хемоглобин беше забележана кај овците на возраст од 9 години, кај кои изнесуваше 5,92 ± 0,90 g/dl.

Клучни зборови: овца; возраст; паразит; хемоглобин

INTRODUCTION

The arrangement of farm animals in Albania is a practice that counts on tradition now. The animal farming production has been the main living source in many many years. Needs have been covered thanks to this production and there always have been amounts to export. This animal farming development in our country was favored from the terrain being rich in grazing yards. The tradition of farm animals (sheep and goat) arrangement has been going through for generations and today is continuing to be a good business.

The products of these animals (sheep and goat) such as meat, milk and wool are used as important incoming sources for the farmers who serve to their arrangement.

In our country today there is a considerable number of sheep and goat. Their arrangement consists in grazing and a stockyard system in relatively not big herds and the consequences are shown in damages and economical loss caused by many diseases, especially parasites.

Specifying the right diagnosis for any desease would assure an efficient cure scheme and as a result healthy animals. To study and know the healthy or sick conditions of an animal, different types of analysis can be used. Part of them is the haematologic analysis.

Haematologic indications such as erythrocytes, leukocytes and leukocytic formula, haemoglobin and haematocrite are very important haematologic indications. To determine those indications is very helpful for the veterinary medics. The fact that haematologic analysis can be realized in a short time and relatively with easiness makes it even easier for the vets. For many pathologic situations, the haematologic analysis completes the story of clinical signs (symptoms), while in some cases it specifies the sickness process diagnosis.

IMPORTANCE OF THE PROBLEM

The sheep in our country, like the sheep all over the world that are kept in the grazing system continuously are being infested from gastrointestinal and liver helmints, that cause bloodshed and blood absorption in stomach and intestines mucosa as well as liver damages. As a result they cause anemia. For this reason anemia is inevitable, because infestation from these worms are permanent. In foreign literature low levels of haemoglobin and erythrocytes number in sheep have constantly been reported that are being kept in grazing system territories with pastures being rich in eggs and larva forms of gastrointestinal helmints either infested by fashioliaza. This situation can be better found in the sheep from our country for several reasons of engagement and prevention of these infestations. Checking macroscopically the sheep livers in a slaughterhouse for 2 years in a row, we have found high levels of liver infestation from lesions caused by helmints's larva forms as well by acute and chronic fashioliaza. Refering to these facts, as factors that aggravate sheep haematologic indications, without studying those parasites themselves and because an haematologic study has never been done in the sheep of Albanian northeast areas, we decided to bring this study subject over.

Our study intends to give a preliminary tableau connected with the scale of anemia reflection in sheep supposed infested from the helmints mentioned above.

MATERIAL AND METHODOLOGY

For studying "Haemoglobin values in sheep aged 6-9" we implemented this methodology:

– 40 sheep aged 6–9 have been taken into a study. Animals have been selected casually from the animals that were brought in the slaughterhouse. Blood has been taken from the ear at about 8 o'clock in the morning and it was treated with EDTA anticoagulant.

– The animals taken into this study were put in groups referring to their age for inspecting haemoglobin values. The animals age was claimed based on the lower jaw cutter teeth.

– Haemoglobin level quotation was succeeded with the help of the Sahli haemometer following the procedures: in a scaled tube decinormal solution of HCl was thrown until it filled up to the line 3 (of the scale per g%) or until the line 10 following the scale that indicates the haemometer unit. In a capillary pipette blood is inhalated to the line 20 mm^3 which is to be added in a scaled tube. The content should be well shaken until a brown homogeneous color shows up, which is an evidence that haemoglobin has joined chlorhydric haematin. After that, the scaled tube is to be placed on a static and distilled water in drops should be added until the mixture color to be the same with that of the standard tube. Adding water should be done carefully, 2–3 drops at a time stirring the content with a mixer everytime the water is added. The test-tube scale should be checked to know the level that reaches lower meniscus of the mixture when colours become equal. This level reflects the amount of haemoglobin in the blood in the haemometer units (if we read the unit scale) or directly in g% (if we read g% scale).

OBTAINED DATA AND THEIR DISCUSSION

From the obtained data, we have seen that the haemoglobin, amounts in all sheep has resulted under the norm compare with the parameters given by Radostits et al., 2007.

Table 1

Average of the haemoglobin level (Hb) for all animals (sheep) (g/dl)

Average value of Hb	Min. value	Max. value	Normal value according Radostits
5.53	3.33	7.5	9–15*

*O. M. Radostits et al., 2007.

From Table 1 we can see that the average of the haemoglobin level is 5.53 g/dl, where the minimal value is 3.33 g/dl and the maximal one is 7.5 g/dl.

The value of 3.33 g/dl of haemoglobin has been found in 2 samples, namely samples 12 and 18, while the maximal value (7.5 g/dl) has been found only in the sample 20.

Haemoglobin connected with sheep age

As it was said above, the sheep taken into this study were 6–9 years old. Table 2 shows how we divided them in groups.

Table 2

Separation of sheep according to the age

	Age in years				Total
	6	7	8	9	
Number. of sheep	6	12	15	7	40
%	15	30	37.5	17.5	100

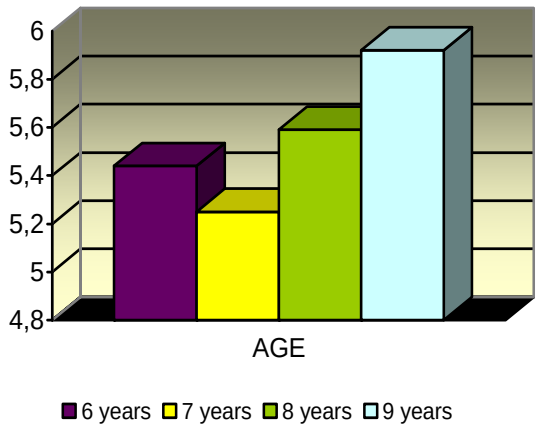
Six sheep are of the age 6, 12 are of the age 7, 15 are of the age 8 and 7 of them are of the age 9. Reflected in percentage 15% are of the age 6, 30% are of the age 7, 37.5% are of the age 8 and 17.5% are of the age 9.

Different ages in this study have shown different levels of haemoglobin. These values are shown in Table 3 and Graphic 1.

Table 3

Values of Hb according to the age

	Age in years			
	6	7	8	9
Hb (g/dl.)	5.44 ± 1.22	5.25±0.86	5.59±0.98	5.92 ±0.90



Graphic 1. Presentation of the haemoglobin level according to the age

The value of haemoglobin for the sheep age of 6 is 5.44 g/dl. In the age of 7 this value lowers to 5.25 g/dl. In the sheep age of 8 the haemoglobin value is 5.59 g/dl, while in the sheep age of 9 this value reaches 5.92 g/dl.

Regarding the literature, in young animals the erythrocytes number is higher than in adult animals. So, as an animal grows up, the haemoglobin level and the erythrocytes number lower. This physiological matter can be explained with a higher intensity of the haemopoietic system that coincides (corresponds) with the growth and maturity period of animals. In our study this matter can't be seen clearly. Comparing values in the sheep age of 6 and 7 we see that the haemoglobin level is lower. This reduction does not happen in other age-groups although the difference between them is very small. We think that those changes do not reflect the literature because the sheep that were taken into this study were infested in different scales from gastrointestinal and liver parasites regardless their age. Consequently, the level of haemoglobin cannot always reflect the literature.

CONCLUSION

- Haemoglobin values are under the norm in all sheep taken into this study compared with the parameters given by Radostits et al., 2007.
- The minimal value is 3.33 g/dl and the maximal value is 7.5 g/dl, while normal parameters according to Radostis et al., 2007 are 9–15 g/dl.
- Haemoglobin values change in accordance to the age.

- The value of haemoglobin for the sheep age of 6 is 5.44 g/dl.
- In the sheep age of 7 this value lowers to 25 g/dl.
- In the sheep age of 8 haemoglobin value is 5.59 g/dl, while in the sheep age of 9 this value reaches 5.92 g/dl.

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