

THE SERUM COPPER AND ZINC VALUES OF THE SHEEP GROWN UP IN THI_QAR VILLAGES

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ABSTRACT

The present study was planned to determine serum Micro mineral status (copper and zinc) of the sheep grown up in Thi_Qar villages .The serum copper &zinc values of the animals were analyzed .With atomic absorption spectrophotometer . The result showed there were non significant differences in all mean serum values of sheep except the mean serum values for animal which showed clinical sings were decreased significantly when compared with other animal which whereby not shown clinical signs .

INTRODUCTION

The living things obtain the mineral substances of body from air ,water and soil on behalf of plants depending on the conditions of the climate , that's why the health of the organism is related to the soil on which it lives (2) since the trace elements are in lots of bimolecular such as hormone and enzyme and have an important role on growing ,they should be found in the food of human being and animals (1)

The zinc having a role in various functions of an organism ,is a trace element which is very important in the diagnosis of the diseases (5).It was also recorded that it has some effect on the activity of some hormones and enzymes such as (insulin .GH,TSH,LH,FSH,ACTH,leucine amino peptidase, carbonic anhydrate)(8).Zinc is known to play a central role in the immune system and in the case of zinc deficiency there was an increased susceptibility to a variety of pathogens(16)

Mineralization of the bone. The insufficiency of trace elements, stimulates the catabolism of protein by making differences on the nucleic acid metabolism and as a result of this effects ,the regeneration and growing of the tissue is affected (2).The copper value in the blood serum differs depending on the age of the animal pregnancy and the absence of the copper in the diet ,the symptom of zinc and copper are associated with the enzyme defeats polyfenol oxidase which has a role in synthesis of melanin include copper .The Acromatrichia is seen in the absence of melanin (14)

A group of researchers(4,17)reported some diseases that are seen with the parakeratotic skin and the differentiation of the color of the skin and the dropping of skin around eyes ,was related to the samples of the plant including insufficient Zinc and copper that was given to the sheep.

The aim of this study is known the excess and insufficiency of trace elements causing some disorder and decrease in production .so in order to search the effects of these substances ,the normal values should be known with this study determining the normal values of the zinc and copper elements which have great importance in the growing of the animals.

MATERIAL AND METHODS

Animals: A total number 63 sheep 1-5 years old from different localities in Thi_Qar villages have been subjected to this study (the names of these villages and the number of sheep shown in Table 1) the selected animals were thoroughly examined and the results of physical and laboratory investigation were reported .The diseased animals showed the clinical signs of zinc and copper deficiency

Blood samples : blood samples were collected by jugular vein puncture after clipping and disinfecting vacutainer tubes without anticoagulant for obtaining blood serum and kept (frozen at -20°C)until biochemical analysis

Biochemical analysis : zinc and copper were measured in the serum spectrophotometrically using Gesan production kits made in ITALY according to the methods described by(10).

Statistical analysis: Independent sample T test was performed in order to compare the two groups for each of the evaluated parameters A difference with $p < 0,05$ was considered to be significant. All statistical analysis was performed with statistic's Pac version age spss 11.

RESULTS AND DISCUSSION

Table (1) explained the number of sheep and the mean serum values of zinc and copper elements in the blood sheep which lived in Thi_Qar villages .And these values are disagreeing with the normal range recorder for other breeds of sheep (6,9)

In table (2) selected 14 animals from sheep which appeared clinical signs such as Alopecia and Parakeratosis compared with 14 other animals from sheep which not showed clinical signs to know the significant difference of the serum zinc &copper values between them ,in this table showed the serum concentration of zinc &copper significantly lower ($p < 0.05$)in the diseased animals than the healthy animals ,thus Alopecia &Parakeratosis may be attributed to the role of zinc in several enzymes as carboxyl peptidase ,alcoholic dehydrogenate ,superoxide dismutase and other

enzymes necessary for carbohydrate ,lipids, protein and nucleic acid metabolism and for many other biochemical reactions in the body metabolism (7)

Furthermore, zinc metal enzymes linked with vitamin A (reductase and alcohol dehydrogenase)which is necessary for healthy skin (3,16)

The decreased levels of zinc & copper in the serum of diseased sheep may be due to the conditions of the environment and the climate and especially the trace element consistency of the soil (12)or could be attributed to the low availability of zinc in the diet by presence of certain substance competing with zinc &copper absorption as phytic acid ,excess dietary calcium (15).

Table (1) explained the name region & number of the sample for each region & the mean values \pm S.E of Zinc & copper for Sheep .

Name region	Number of the sample	Zinc mg/dl	Copper mg/dl
Dawayah	7	68.42 \pm 0.21	71.42 \pm 0.39
Al Sayih	7	72.71 \pm 0.15	88.71 \pm 0.15
Sayid Dikheel	7	79.85 \pm 0.63	77 \pm 0.36
Al nassiriya center	7	68.28 \pm 0.02	89.42 \pm 0.41
Al Batha	7	65.57 \pm 0.85	84.20 \pm 0.21
Suq-El Shiyookh	7	70.85 \pm 0.34	92.85 \pm 0.47
AL-Fajir	7	70.02 \pm 0.98	78.28 \pm 0.56
Qalat Suker	7	60.71 \pm 0.07	83 \pm 0.45
AL-Gharraf	7	73.42 \pm 0.13	85.28 \pm 0.36

Table (2) mean values \pm S.E of Zinc & copper in clinically healthy sheep and diseased sheep

	Copper	Zinc	N
Clinically healthy sheep	85.57 \pm 0.62 ^a	77.86 \pm 0.96 ^a	14
Diseased Sheep	45.61 \pm 0 .61 ^b	38.49 \pm 0.50 ^b	14

قياس القيم المصلية للنحاس والزنك للأغنام التي تربي في قرى محافظة ذي قار

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الخلاصة

تهدف الدراسة الحالية إلى تحديد قيم معدلات المصل للنحاس والزنك في الأغنام التي تربي في قرى محافظة ذي قار ، تم تحليل عينات المصل للزنك والنحاس في جهاز المطياف الضوئي للامتصاص الذاتي وحيث بينت النتائج بأنه لا توجد اختلاف معنوي في معدل القيم المصلية للنحاس والزنك لمعظم للأغنام ماعدا تلك التي أظهرت عليها بعض العلامات السريرية حيث كانت معدل قيمها المصلية أقل معنويا .

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