

RESPIRATORY FUNCTION ORGANISM OF COWS AND BLOOD SYSTEM AS AN ESSENTIAL PART OF REGULATORY ADAPTATION

Mukhamedyarova L.G, A.R Tairova

The Ural State Academy of Veterinary Medicine" Troitsk, Chelyabinsk region
atairova@yandex.ru

Introduction

Integral result of the adaptive value of the reactions of animals, aimed at maintaining homeostasis is a non-specific resistance. At the same time, the adaptive capacity of the body affects every factor of the environment (natural and climatic conditions, and feeding), but especially influenced by their combined effect, which causes the animals stress. In this regard, based on current understanding of the mechanisms inducing the stress response in addition to neural and endocrine components also considered as hematological component in the formation of the focal point hormonally metabolic status of an organism under extreme conditions and hematological reactions generalized stress syndrome blood system [1 ,2, 3].

Materials and methods investigations

Guided by the above, we have investigated the leukocyte profile of Simmental cows Austrian selection (I group) and domestic breeding cows (II group) of the same species contained in the farms of the forest-steppe zone of the Southern Urals. For a more informative assessment of the presence of a stress reaction in the animals we have calculated the rate of state. Since blood cells involved in the regulation of neuroendocrine stress mechanisms are not limited potential secretory leukocyte because in implementation hematological stress syndrome may also be involved erythrocytes together with the identification of leukocyte profile cows were studied and some indicators of erythropoiesis in the organism of cows.

Results and Discussion

Results of these studies showed that the content of aritocytes blood in Austrian breeding cows was $7,56 \pm 0,20 \times 10^{12} / l$, that 34,78% ($p < 0,01$) was higher compared to the group of cows breeding domestic ($4,93 \pm 0,11 \times 10^{12} / l$). Against the background of the increased number of red blood cells in cows in group I found a significant decrease in hemoglobin levels to $85,7 \pm 1,57 \text{ g / L}$ and hemoglobin index - up 0.34 pc, which is 34,53 ($p < 0,01$) and 51 43% ($p < 0,01$) lower compared to the animals of group II. Apparently activation of the biosynthesis of red blood cells is due to reduction of the reserve stocks of the organism cows and is aimed at providing an oxidation-reduction potential in a developing hypoxia. This is indicated by a low hematocrit level, amounting in cows in group I $31,39 \pm 0,76\%$ vs $35,60 \pm 1,18\%$ -domestic breeding cows. Since leukocyte cells can be considered as "diffuse endocrine system," stress response of the programming in response to various changes homeostasis was conducted quantification of leukocytes and leukocyte blood profile cows imported. Mounted leukocytosis in cows in group I ($9,53 \pm 0,08 \times 10^9 / l$) compared with cows domestic breeding ($5,49 \pm 0,11 \times 10^9 / L$), associated processes long-term adaptation of cows, gradually emerging as a result of long-acting on body of environmental factors .. In the morphological parameters of blood imported cows observed characteristic stress quantitative changes in blood cell: eosinopenia, slight lymphopenia and marked neutrophilic leukocytosis.

About greatly stress adaptation processes and the lack of evidence of compensatory allowances index of the functional state of the organism, which characterizes the depth of the restructuring of functional systems, amounting to 13.00 (-17.37% Cv), which is 2.93 times lower in comparison with domestic breeding cows .

Key words: Austrian selection, the domestic breeding, stress state, erythropoiesis, leukocytes

Summary

Adaptation of Simmental cows Austrian selection is accompanied by increased erythropoietic activity, which have an obviously adaptive nature, quantity and functional state of polymorphonuclear leukocytes, neutrophils, eosinophils, lymphocytes, monocytes, and indicates the formation of the body of imported cows immune deficiency.

References

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