

ERYTHROGRAMA BLOOD CALF COWS AND CALVES AT DIFFERENT BIOGEOCHEMICAL PROVINCES WITH MICRONUTRIENTS DEFICIENCY

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The paper presents quantitative and qualitative characteristics of red blood cells calf cows and received from them newborn calves at different biogeochemical provinces microelementosis. The work carried out during the 2015-2016 biennium. At the department of physiology, pathophysiology and immunology National Agriculture University of Ukraine. To accomplish this goal were conducted five series of studies in the farms of different biogeochemical provinces of Ukraine. The experiment was carried out on Holstein breed cows aged 5-6 years. According Clinical examination of animals were selected in each sector 10 animals with clinical signs and microelementosis clinically healthy. Diagnosis put on the basis of clinical and laboratory research. The material for research white blood 5 animals from each group 10 days before calving and newborn calves from these animals obtained from the jugular vein. Determined in whole blood erythrocyte count, hemoglobin and hematocrit conventional methods. The settlement was determined by the indices of red blood cells - red blood cell volume average, the average concentration of hemoglobin in one erythrocyte, the average weight of hemoglobin and a color indicator.

In clinically healthy calf cows and received their newborn calves from different biogeochemical provinces the number of red blood cells and hemoglobin in the blood is in the physiological range for the physiological state and age of the animals. Thus, the number of red blood cells and hemoglobin blood calf cows amounted to 6,25-7,04 $\times 10^{12} / l$ and 111-125 g / l, while in newborn calves these figures were somewhat higher - 7,31-7,79 $\times 10^{12} / l$ and 116-120 g / l. Regardless of biogeochemical province the number of red blood cells of cows with clinical signs microelementosis (1,3-1,4 times; $p < 0.001$) and the amount of hemoglobin (1.2-1.4-fold, $p < 0,05-0, 01$) significantly lower rate of healthy animals. Due to reduction in the total number of red blood calf cow's hematocrit rate was at lower levels than in healthy animals. Moreover, the increase in erythrocyte hemoglobin saturation in sick animals (color index) in 21.6% of 2,9- obviously is adaptive in nature to reduce the oxygen-transport function of

blood. Unlike cow's indicators symptomatic microelementosis in their newborn calf's hematocrit rate was not significantly differs from the indicators of healthy animals, however, the color index was higher at 1.2-1.5 times ($p < 0,05-0,001$). It is interesting to note a lower average volume of red blood cells, hemoglobin content at higher average concentration of hemoglobin in red blood cells of healthy newborn calves compared to their mothers. Reducing the number of red blood calf cows with clinical signs microelementosis and received from them was accompanied by growth of calves in size. Thus, ESR cows with clinical manifestations microelementosis was on 16,4-41,1% ($p < 0,05-0,001$) above according to their healthy counterparts, while the difference in calves reached 21,6-56,4 % ($p < 0,05-0,001$). Conducted research found that the average content of hemoglobin in red blood cells calf cows with most research groups with clinical signs microelementosis up to 20,9-29,0% ($p < 0,01-0,001$) from that of healthy animals. Similar changes occurred with erythrocytes of newborn calves obtained from cows with clinical manifestations. The decrease SKHE (20.3%; $p < 0.001$) obviously is the result of significantly higher levels of lead in their blood - $5,66 \pm 0,57$ mmol / l, despite indicator - 0,98-2,35 mmol / l animals other research groups. However, calves obtained from cows with clinical signs microelementosis significant differences in SKHE were noted.

Thus, the set of essential micronutrients deficiency impact on the quantity and quality of red blood cells calf cows and calves are derived from expanding the existing idea of the intensity of hematopoiesis in cows and calves.

KEYWORDS: ERYTHROCYTES, HEMOGLOBIN, HEMATOCRIT, ERYTHROGRAMA, MICROELEMENTOSIS, BIOGEOCHEMICAL PROVINCE.