

## HEMATOLOGIC INDICATORS INFLUENCED BY THE DOWNER SYNDROME IN DAIRY COWS

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### Abstract

Cows that cannot stand on their feet for more than 24 hours are treated as cows with “downer” syndrome. Usually such cows are serious clinical cases because majority fail to stand up few days after medical treatment and often for them should be applied forced slaughtering. In them also occur changes on hematologic indicators, which might be clinically used for the patient's prognosis. The study aims to assess the influence of the downer syndrome in dairy cows in some hematologic indicators.

The study was carried in the period January 2014 - March 2016. In 28 cows of different ages and breeds, clinically diagnosed with the downer syndrome, blood samples were taken from the jugular vein and indicators of the total of white cells (WBC), red cells (RBC), hemoglobin (HB), hematocrit (HCT), average corpuscular volume (MCV), corpuscular hemoglobin (MCH), the ratio between red and white blood cells (RDV), the total of platelets (PLT) and indicators of the leukocyte formula (neutrophils, lymphocytes, monocytes, eosinophil and basophiles) were studied. Blood samples were analyzed using hematology analyzer, which is used in laboratory for standard procedures of blood check in cattle. Obtained data were statistically analyzed with method ANOVA (homogeneity of variances and normality) and compared with values of the reference according to Radostits [8], and with the average hematological indicators of clinically healthy cattle in our country.

Results indicated that cattle affected by the downer syndrome manifested significant changes in several hematological indicators. Major changes appear in the total amount of white cells (WBC, respectively  $9.37 \pm 1.21$  from  $5.58 \pm 1.67$ ), in hematocrit (HCT, respectively  $28.63 \pm 1.24$  from  $29.57 \pm 2.8$ ), in the number of granulocytes ( $4.401 \pm 0.27$  from  $3.87 \pm 0.42$ ), lymphocytes ( $4.67 \pm 0.78$  from  $4.52 \pm 0.48$ ) and of platelets ( $332.4 \pm 47.3$  from  $388.3 \pm 25.5$ ) Found hematological differences are statistically confirmed ( $p < 0.05$ ).

Our information are close also with differences of hematological indicators in cows with downer syndrome, reported by other authors as well. Changes in hematological indicators can be used for prognostic purposes.

**Key words:** Downer syndrome, WBC, RBC, HB, HTC.