

## The Comparative Evaluation of the Main Hematological and Biochemical Parameters of Racing and Rock Pigeons

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### SUMMARY

In the present study a total number of 20 individuals were investigated, 10 racing and 10 rock pigeons male and female, over 1 years of age and weighing an average of 450g.

The pigeons were divided into 2 groups, and investigations aimed at determining the main hematological parameters and the metabolic profile were performed.

The individual values of the hematological and biochemical parameters of interest were analyzed and compared statistically using specialized biostatistics applications (Graph Pad Instant V3.0 - compare means-two tail p test and Microsoft Excel).

Comparative analysis of the investigated hematological parameters showed statistically significant variations ( $p < 0.05$ ) for red blood cell count ( $p = 0.0377$ ), hemoglobin ( $p = 0.0088$ ), mean corpuscular volume ( $p = 0.0446$ ) and significantly distinct ( $p < 0.01$ ) for mean erythrocyte hemoglobin ( $p = 0.0016$ ); The leukocyte parameters varied significantly only in case the total number of leukocytes ( $p = 0.0312$ ) and eosinophil percentage ( $p = 0.0244$ ).

The biochemical indices showed distinctly significant oscillations in the case of albumin ( $p = 0.0016$ ) and very significant for protein ( $p = 0.0016$ ), glucose ( $p < 0.0001$ ), creatine phosphokinase ( $p < 0.0001$ ), calcium ( $p < 0.0001$ ), phosphorus ( $p < 0.0001$ ) and potassium ( $p = 0.0001$ ) levels.

The analysis of the leukogram highlighted the fact that the percentage of heterophiles was situated above the reference interval 19,8-32,6% (Gylstorff I., 1983) in case of the rock pigeons, and under the physiological interval of 1,5-2,7% (Gylstorff I., 1983) for the percentage of eosinophils in the racing pigeons.

The mean biochemical parameters exceeded the physiological limits (Hochleithner M., 1994) in case of protein ( $3,800 \pm 0,163$  respectively  $3,500 \pm 0,183$ g/dl), aspartate amino transferase ( $128,000 \pm 22,983$  respectively  $141,000 \pm 5,185$  U/l) and calcium ( $15,400 \pm 0,627$  respectively  $11,900 \pm 0,226$  mg/dl) levels, in both groups of pigeons and were situated as under the lower limit in case of sodium ( $134,000 \pm 7,916$  respectively  $131,000 \pm 4,784$  mmol/l) and potassium ( $3,300 \pm 0,411$  respectively  $2,400 \pm 0,476$  mmol/l) levels.

The hematological and biochemical data obtained from the analysis of the investigated parameters shows statistically significant differences between racing and common rock pigeons.

**Keywords:** hemoleukogram, biochemistry, statistic analyses, avian.

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