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Blood Cell Morphology and Blood Biochemistry of *Pelophylax bedriagae*

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Aim of the study: Amphibians have evolved an array of adaptive structures and mechanisms to cope with environmental changes that result from their life histories, which involves a transition from water to land. Compared to other vertebrates, large erythrocytes are one of these adaptations. Most of the studies about Anuran blood are focused on counting blood cells, measuring their dimensions and biochemical analyses. In this study, we aimed to evaluate the differentiation of values of blood parameters and biochemistry in *Pelophylax bedriagae* due to their genders.

Material and Methods: The blood cell morphology and blood biochemistry of the water frog *Pelophylax bedriagae,* from Denizli, TURKEY were studied in 2014 and 2015 from 9 males and 7 females from two different locations. The blood cell counts were performed utilizing a Thoma slide, and the standard solutions (Hayem's and Turck's) were used as diluting solutions for erythrocytes and leukocytes. Blood cell sizes were measured from dry frotti slides, which stained according to standard Romanowski techniques, under Olympus CX31 binocular microscope. Biochemical parameters of the blood samples determined for each individual using the ABL Flex800 Radiometer according to the manufacturer's instructions. Kruskall Wallis and Mann Whitney U tests were used to determine the differences between parameters and genders under SPSS 20.0.

Results: Obtained values were statistically evaluated to see whether morphological and biochemistrical parameters of blood cells in *Pelophylax bedriagae*. The pH, CO_2, O_2 concentrations were found 7.32, 23.54, and 125.45 (mmHg), respectively. Similarly, blood potassium, sodium calcium, chloride, glucose and lactose levels were found as 5.75, 165, 1.88, 98.64, 15.39, and 6,18 (mmol/L), respectively. Moreover, blood haemoglobin, saturated oxygen, oxyhemoglobin and carboxyhemoglobin levels were found as 5.48g/dl, 77.18%, 62.16%, 20.37%, respectively. In addition, the mean of red blood cell count was calculated as 288000 while white blood cell count was calculated as 3688. The results of this study were discussed in terms of the effect of gender on blood values.

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Keywords: Amphibian, Blood cell, Erythrocyte size, Haematology, Biochemistry.