World Academy of Science, Engineering and Technology
International Journal of Environmental and Ecological Engineering
Vol:9, No:04, 2015

Some Hematological Parameters of the Mauremys rivulata in Two Different Water Quality in the Biga Stream (Çanakkale, Turkey)

Authors : Cigdem Gul, Murat Tosunoglu, Nurcihan Hacioglu

Abstract : The contamination or desiccation of fresh waters also has a negative effect on freshwater turtles like other fresh water-dependent species. In order to conserve those species, which are confronted with such negative conditions, it is necessary to know beforehand the biology and the physiology of species. In this study, a comprehensive health assessment was conducted on a total of 20 clinically normal individuals free living Western Caspian Turtle (Mauremys rivulata) captured from two different freshwater localities in the Biga stream (Çanakkale-Turkey). When comparing our findings with the Turkish legislation (Water pollution control regulation), the 1. Locality of the Biga stream in terms of total coliform classified as "high quality water" (Coliform: 866.66 MPN/100 mL), while the 2. Locality was a “contaminated water" (Coliform: 53266.66 MPN/100 mL). Blood samples for hematological and biochemical analyses were obtained from the dorsal coccygeal vein. A total of 1-2 mL of blood was collected from each of the specimens via needle. After the required procedures had been performed, the turtles were put back in the same localities. Hematological and biochemical analyses based on high quality water and contaminated water, respectively, are as follows: Red blood cell count (512600-582666.66 per cubic millimeter of blood), white blood cell count (5920-5980 per cubic millimeter of blood), hematocrit value (24-24.66 %), hemoglobin concentration (6.52-6.35 g/dl), mean corpuscular volume (466.20-468.98 fl), mean corpuscular hemoglobin (125.77-113.84 pg), mean corpuscular hemoglobin concentration (28.25-26.49 %), glucose (94.43-87.43 mg/dl), creatinine (0.23-0.3241 mg/dl), uric acid (12.59-10.48 mg/L), albumin (1.46-1.25 g/dl), calcium (8.67-9.59 mg/dl), triglyceride (95.55-75.21 mg/dl), and total protein (4.85-3.45 g/dl). When an examination was made depending on the water quality of freshwater, variations were detected in hematology and biochemistry values, but not found significant difference.

Keywords : biochemistry, freshwater quality, hematological parameters, Mauremys rivulata.
Conference Title : ICWERC 2015 : International Conference on Wildlife Ecology, Rehabilitation and Conservation
Conference Location : Paris, France
Conference Dates : April 27-28, 2015