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Hemato-Biochemical Values of Indigenous Manipuri Cattle

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Abstract

The knowledge of hematology and biochemical values are vital for a veterinarian for health care management, assessment of physiological and pathological, metabolic status, stress and assessment of adaptability to a given geographical location. Various factors such as age, sex, breed, stress, diet, body condition, reproductive status, recent activity, hydration, ambient temperature and altitude contribute towards physiological variability of hematology and biochemical values of animals. Hence, Reference Interval (RI) of a breed or species in one geographical location cannot be taken as RI in another locality. The present study was aimed to establish a RI of hematology and biochemical values of indigenous Manipuri cattle. Blood samples were collected from ten (n=10) healthy indigenous Manipuri cattle from College Livestock Farm Complex (LFC), Jalukie, Nagaland. Hematology and biochemical variables were estimated by an automated blood cell and biochemical analyser, respectively. Differential Leukocytes Count (DLC) was evaluated after staining the slides with Leishman's stain. The overall value (Mean ± SEM) for Packed Cell Volume (32.24±1.40 %), Haemoglobin (13.15±0.77g/dL), Total Erythrocyte Count (7.47±0.28 $x10^6$/µL), Mean Corpuscular Volume (43.3±1.42 fL), Mean Corpuscular Haemoglobin (17.64±1.02 pg), Mean Corpuscular Haemoglobin Concentration (40.64±1.13 g/dL), Red Cell Distribution Width (14.11±0.44), Total

Leukocyte Count (14.05±0.94 x 10^3/µL), Lymphocyte (56.75±4.80 %), Neutrophil (31.48±3.49 %), Monocyte (8.75±0.84 %), Eosinophil (5.25±0.96 %), and Basophil (0.625±0.32 %), respectively. The overall mean value (Mean ± SEM) of Glucose (55.53±3.35 mg/dL), Calcium (11.23±0.23 mg/dL), Albumin (2.72±0.05 g/dL), Blood Urea Nitrogen (14.96±1.14 mg/dL), Urea (31.99±2.45 mg/dL), Creatinine (0.49±0.11 mg/dL), Uric acid (0.86±0.07 mg/dL), Bilirubin (0.10±0.007mg/dL), Cholesterol (143±9.78mg/dL), Alanine Amino Transferase (27.94±1.76 U/L), Aspartate Amino Transferase (71.39±4.19 U/L) and Alkaline Phophatase (62.4±6.89 U/L), respectively. The hemato-biochemical values were within normal ranges of cow except Total Leukocyte Count. It can be concluded that the data of this study will be act as a guide on hemato-biochemical values for the indigenous Manipuri cattle.

Biography

Bhabesh Mili, B.V.Sc.&A.H., M.V.Sc., Ph.D (Veterinary Physiology), assistant professor, College of Veterinary Sciences and Animal Husbandry, Central Agricultural University, Imphal since 2016. He has about 5 years of teaching, research and administrative experiences. His expertise is Stem Cell Biology and passion in improving the animal health especially in the field of Regenerative Medicine through recent modern biotechnogical applications.

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