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## Hematology, Serum Total Cholesterol and Thyroid Hormone Concentrations in Cyclic and Acyclic Nili-Ravi Buffaloes

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### Abstract

In this study, hematological variables and serum levels of total cholesterol and thyroid hormones (T<sub>3</sub> and T<sub>4</sub>) in cyclic and acyclic Nili-Ravi buffaloes were investigated. Sixty buffaloes with clinically normal reproductive tract were divided into two equal groups i.e. cyclic and acyclic, depending upon the presence or absence of active corpus luteum on the ovaries. Blood samples with and without anticoagulant were collected aseptically from each animal. Serum was harvested from blood samples without anticoagulant and utilized for estimation of total cholesterol, T<sub>3</sub> and T<sub>4</sub> concentrations, using kit method. Blood samples containing anticoagulant were used for determination of hematological variables viz. Hb, PCV, ESR, MCV, MCH, MCHC, TEC, TLC, DLC and platelets count. Mean values of total cholesterol (142.85±7.43 vs 88.84±5.33 mg/dl), Hb (11.54±1.61 vs 9.87±1.14 g/dl), PCV (40.28±6.06 vs 36.80±4.30%), MCV (64.21±3.55 vs 56.81±5.35fl), MCH (21.58±5.47 vs 15.99±1.84 pg), MCHC (29.32±2.52 vs 26.95±2.0 g/dl) and TEC (6.29±0.97 vs 4.87±1.62x10<sup>6</sup>/μl) were higher in cyclic than acyclic buffaloes (P<0.05), while reverse was true for TLC and platelet counts. However, ESR, lymphocyte, monocyte, eosinophil and neutrophil percentages did not differ between animals of the two groups. Moreover, mean values of T<sub>3</sub> and T<sub>4</sub> in cyclic and acyclic buffaloes did not differ. In conclusion, low level of serum cholesterol might have been among causes of anestrus in these buffaloes, as cholesterol is the precursor of sex hormones like progesterone and estradiol, and its level was lower in acyclic than cyclic buffaloes. However, thyroid hormones do not seem to play any significant role in the occurrence of this problem.

**Key words:** Acyclic, Buffalo, Cyclic, Hematology, Serum cholesterol, T<sub>3</sub> and T<sub>4</sub>



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