

Comparative studies of certain Bio-chemical constituents of normal cyclic and anoestrus surti buffaloes

M.K. Hedao, K.P. Khllare, M.D. Meshram, S.K. Sahatpure and M.G. Patil

Department of Animal Reproduction and Gynaecology,
Post Graduate Institute of veterinary and animal Sciences, Akola. - 444104 (M.S.)

Anoestrus in buffalo is the most common condition faced by veterinarians. Incidence of anoestrous is higher (56.0%) in buffalo heifers than cow heifers (36.0%) (Luktuke et al 1979). There is definite role of calcium and phosphorus in female reproduction. Lack of minerals especially calcium and phosphorus upset the proper functioning of reproductive organs. Several investigation have indicated a direct relationship between nutrients and the number of services per conception (Mc.Donald, et al, 1961).

Material and Methods

The present investigation was conducted on 24 Surti buffaloes maintained at Buffalo Breeding Farm, Hingoli. After thorough gynaeco-clinical examination, these animals were divided into two groups.

Group I :- Consist of 12 fertile animals, exhibiting signs of oestrus, evidenced by the presence of Graffian follicle / Corpus luteum on the ovary.

Group II :- Consist of 12 infertile animals which had not shown any sign of oestrus since last two months and had smooth non-functional ovaries.

Blood samples were collected aseptically from jugular vein using a sterilized glass syringe having 16 gauge needle. Serum was separated from coagulated blood and were stored at - 20 °C with 1-2 drops of Merthiolate (0.01%) till laboratory analysis. Serum was analyzed for calcium by Spectrophotometric modified method of Spandrio (1964) and

inorganic phosphorus by Goldenberg and Fernandez as per standard method. Total protein and BUN by another. Statistical analysis of data was done as per standard method.

Results and Discussion

In the present study the calcium concentration is found to be in normal range of healthy buffalo and difference is found to be non-significant.

The present findings are lower than that Khattab et al (1995) who recorded level of calcium 10.91 mg/dl in cyclic cows and the findings are in agreement with these findings as they recorded 8.77 mg/dl calcium in case of anoestrus Egyptian buffalo. The phosphorus concentration is in normal range of healthy buffalo.

Non-significant difference was recorded in the present findings. The present findings are higher than that of Sharma et al (1999) who recorded the lower phosphorus concentration in anoestrous buffaloes heifers. Vadodaria et al (1981) observed higher serum organic phosphorus in Surti buffalo at oestrus and anoestrus condition.

The total protein concentration was 7.59 ± 0.056 and 8.37 ± 0.35 mg/dl respectively in cyclic and non-cyclic buffaloes. These levels are within normal physiological range of healthy buffaloes and the differences are non-significant. The findings are in agreement with Chandolia and Verma (1987) recorded total protein value as 9.25 ± 0.28 g/100ml. The present findings are higher than that of Umesh

Table-1. Serum levels of macrominerals and biochemical constituents in normal cyclic and anoestrous Surti Buffalo.

Serum Constituents	Normal Cyclic (12) Mean \pm SE	Anoestrous (12) Mean \pm SE	't' Value
Calcium (mg/dl)	9.44 \pm 0.32	8.66 \pm 0.53	1.3 ^{NS}
Phosphorus(mg/dl)	4.29 \pm 0.36	4.35 \pm 0.26	0.13 ^{NS}
Total Protein (mg/dl)	7.59 \pm 0.56	8.37 \pm 0.35	1.21 ^{NS}
BUN (mg./dl)	10.68 \pm 1.40	21.14 \pm 1.70	4.84 ^{**}

Table-2. Blood haematological findings in cyclic and non-cyclic Surti buffaloes.

Parameters	Cyclic Mean \pm SE	Non-cyclic Mean \pm SE	't' value
Hb (g%)	12.96 \pm 0.37	9.98 \pm 0.30	6.47 ^{**}
PCV (%)	38.58 \pm 1.14	29.25 \pm 0.82	6.81 ^{**}
WBC (10 ³ /cmm)	9.08 \pm 0.20	7.53 \pm 0.43	3.36 ^{**}
RBC (10 ⁶ /cmm)	6.8 \pm 0.13	6.06 \pm 0.26	24.07 ^{**}
Neutrophils (%)	31.25 \pm 0.56	31.16 \pm 0.97	0.08 ^{NS}
Lymphocytes (%)	58.58 \pm 0.92	56.83 \pm 0.1	1.45 ^{NS}
Monocytes (%)	6 \pm 0.67	8.58 \pm 0.41	3.35 ^{**}
Eosinophils (%)	4.16 \pm 0.26	3.16 \pm 0.20	3.03 ^{**}
Basophils (%)	0.16 \pm 0.10	0.25 \pm 0.12	0.64 ^{NS}

et al (1995) who recorded the lowest value as 5.077 \pm 0.217 and 5.005 \pm 0.149 mg/dl in cyclic and anoestrous buffaloes. Higher level of BUN was recorded 10.68 \pm 1.40 and 21.14 \pm 1.70 mg/dl respectively in cyclic and non-cyclic buffaloes. It may be due to high concentration of protein in diet.

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Correction

Vol.1 No.3, March 2008, page no. 67, 83, please read E.Coli 0157:H7 - **Trevor Francis Fernandez and M.Mohan** instead of E.Coli 0157:H7 - Trevor Francis Fernandez.

Vol.1 No.3, March 2008, page no. 67, 80, please read Paraplegia treated with homeopathy drug - B.M. Raut, M.S.Dhakate, D.S.Raghuwanshi, **B.M.Gahlod, S.V.Upadhye**, and M.N. Donekar instead of Paraplegia treated with homeopathy drug - B.M. Raut, M.S.Dhakate, D.S.Raghuwanshi, B.M.Ghlod, U.S.Upadhye, and M.N. Donekar.