

SERUM METABOLIC AND MACRO-MINERALS PROFILE IN POSTPARTUM ANESTRUS SURTI BUFFALOES TREATED WITH OVSYNCH ALONE AND IN COMBINATION WITH PRID

H.R. SAVANI, C.T. KHASATIYA*, S. SAXENA, S.B. PATEL, V.K. SINGH, S.S. CHAUDHARY AND C.F. CHAUDHARI

Department of Veterinary Gynaecology and Obstetrics, College of Veterinary Science and Animal Husbandry, Navsari Agricultural University, Navsari, Gujarat

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ABSTRACT

Eighteen anestrus Surti buffaloes were subjected to Ovsynch or Ovsynch plus PRID or inseminated at spontaneous estrus (n=6 in each group). Serum protein and cholesterol was higher ($p < 0.05$) in synchronized buffaloes compared to their control counterparts. Serum glucose, calcium, phosphorus and magnesium concentrations were similar ($p > 0.05$) between animals during the study period.

Key words: Anestrus, Buffalo, Metabolic, Mineral, Ovsynch

True anestrus is a result of suppression of reproductive hormone release through the effect of lactation, nutrition and systemic diseases. This study assessed the metabolic and macro-mineral profile in postpartum Surti buffaloes subjected to estrus synchronization protocol.

Eighteen Surti buffaloes between 45 and 120 days postpartum were included in the present study. Estrus was detected daily with the help of teaser bull parading during morning and evening hours. The animals not exhibiting overt signs of estrus were segregated and subjected to rectal palpation. The animals with smooth ovaries on rectal palpation at eleven-day interval were divided at random into three groups of six animals each. The first group was subjected to standard ovsynch protocol followed by fixed time inseminations (FTAI) twice, morning and evening, on day 10 of protocol. The second group buffaloes were inserted PRID (0.9 g of progesterone) intra-vaginally which was kept *in-situ* from day 0 to 7 of ovsynch protocol. Rest of the ovsynch protocol and FTAI was same as in group-1. The third group control (no hormone therapy)

buffaloes were inseminated at spontaneous estrus. The pregnancy was confirmed per rectally 60 days of last AI.

Blood samples (5-6 ml) were collected from all animals on day 0 (prior to treatment), day 4 (during treatment), day 8 (after cloprostenol inj.), and day of estrus / FTAI and on day 28 (18th day post-AI) by jugular vein puncture in serum clotting vacutainers, and serum separated was stored at -20°C until analysis. Serum was subjected to estimation of serum metabolic profile (glucose, protein, cholesterol) as per standard procedures, as well as macro-mineral profile (calcium, phosphorus and magnesium) using an Atomic Absorption Spectrophotometer.

The test of significance among and within the groups for micro elements profile was made by analysis of variance and the mean differences between and within the groups were tested using Duncan's multiple range test at 5% level of significance.

Serum glucose in acyclic Surti buffaloes was similar ($p > 0.05$) between days within and between treatment and control groups. (Table 1). However, serum total protein and cholesterol was higher in

*drctkhasatiya@yahoo.in

synchronized buffalo than control group. Similar values were obtained earlier in anestrus buffaloes (Kumar *et al.*, 2010; Parmar *et al.*, 2015). Moreover, higher serum cholesterol concentration observed in Ovsynch plus PRID group compared to Ovsynch group was in agreement with earlier findings (Buhecha *et al.*, 2016). Serum macro-mineral profile (calcium, phosphorus and magnesium) of acyclic Surti buffaloes neither differed ($p>0.05$) within group nor between treatment and control groups at any of the intervals.

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