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Short communication

Study on some blood biochemical parameters in postpartum crossbred cows treated with GnRH and $PGF_2\alpha$

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ABSTRACT

The levels of various blood biochemical parameters viz. plasma calcium, inorganic phosphorous and total protein were marginally higher in the GnRH and GnRH + $PGF_2\alpha$ treated groups than the control. The Acetone level during the early postpartum period, however, was lower in treated than control group indicating beneficial effect of treatment..

Key words : GnRH, $PGF_2\alpha$, calcium, phosphorus, protein, cow

Dietary minerals are known to affect the physiological functions in general and reproduction in particular besides working as co-factor or activator of enzyme system. (Hidiroglou, 1979). The calcium has been found to sensitize the female tubular genitalia for the action of hormones (Moddie, 1965;). The protein deficiency has been considered to be a factor responsible for failure or delay in the onset of post-partum estrus (Herrick, 1977). In high milk producing animals deficiency of carbohydrate and fat metabolism may result in hypoglycaemia and ketonemia (Baird, 1982) which, inturn adversely affect the productivity through reduced fertility (Olds *et.al.*, 1979).

An experiment was conducted on eighteen advanced pregnant crossbred dairy cows in their first to sixth lactation, having good body condition. All these animals were under the routine management and supervision of the respective farmers.The selected cows were randomly allocated into three groups of six each. viz, two treatment groups designated as T1 and T2 and one control group designated as 'C'.

The T1 group of animals received 2.5 ml of GnRH (Receptal â) I/M on day 14 post-partum and T2 group received 2.5 ml of GnRH (Receptal â) I/M on day 14 postpartum followed by 2.5ml of PGF2 a (Iliren â) i/m palpation of matured CL on either of the ovaries (22 to 26 days of post partum). The control group of cows did not receive any treatment. The first blood sample was collected on the day of calving, the second on day 14 post-partum prior to GnRH and the third blood sample was collected on day 45 post-partum in animals of both treated and control groups. Blood samples were collected in heparinised vials (5-10 IU/ml of blood) and were transferred to laboratory under refrigerated condition. The samples were centrifuged at 2500 rpm for 15 minutes for plasma separation and the separated plasma was subjected for estimation of various blood biochemical parameters like calcium as per sendroy (1944), phosphorous by Fiske and Subarao (1925), protein asper Biuret method by Reinhold (1953), Acetone by salicyaldehyde reaction by Nadeau (1952). The data were analysed using analysis of variance and student's 't' test as described by Snedecor and Cochran (1980).

All the four blood biochemical parameters estimated in this study namely calcium , inorganic phosphorous, including ca:p ratio, total protein and acetone did not reveal any significant difference between the groups. The levels of calcium and inorganic phosphorous and there ratio have been related to the reproductive performance in cattle. The mean values of plasma calcium and inorganic phosphorous in both pre and post treatment samples irrespective of the groups ranged between 8.78 to 9.75mg per cent and 4.10 to 5.43 mg per cent, respectively. These values are well within the range reported by Horst *et.al.*, (1976),

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Chalpathi rao (1979), Rao *et.al.*(1980), Agrawal *et. al.,(1985)* Quayam *et.al.*, (1987), Bagal and Kadu, (1988), Patel *et.al.*, (1994) in cows. The mean values of the plasma total protein levels in both pre and post treatment samples irrespective of the groups ranged between 8.68 to 9.13 gm percent. These values are well within the range reported by Larson *et. al.*, (1980), Agarwal *et.al.*, (1985), Begal and Kadu, (1988) , Honnappagol (1991), in cows and buffaloes. The mean values of plasma acetone levels in pre and post treatment samples irrespective of the groups ranged between 9.27 to 10.65 mg/100 ml.These values are well within the normal range reported by Roberts (1971) in postpartum cows.

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